

THE
AMERICAN JOURNAL OF PHARMACY.

~~~~~  
NOVEMBER, 1870.  
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EIGHTEENTH ANNUAL MEETING OF THE AMERICAN
PHARMACEUTICAL ASSOCIATION, HELD AT BALTI-
MORE.

FIRST SESSION.

The Eighteenth Annual Meeting of the American Pharmaceutical Association convened in the lecture-room of the University of Maryland, in the City of Baltimore, Maryland, on the 13th of September, 1870, at 3 o'clock P. M. President Sargent, in calling the meeting to order, said:

"I wish to announce, before proceeding to the regular business of the session, that the British Pharmaceutical Conference assembled at three o'clock to-day in the City of Liverpool. This concurrence in the time of meeting of two kindred Associations, in different and widely separated nations, would seem to render appropriate something more than a formal recognition of the fact, and to call for some expression of our interest in an Association having the same aims as our own, and speaking the same language."

The following Committee on Credentials was then appointed, viz., William S. Thompson of Baltimore, James T. King of Middletown, N. Y., Newton Pierpoint of Illinois, who, after consultation, reported the following gentlemen as duly accredited to this meeting:

From the Philadelphia College of Pharmacy.—W. Procter, Jr., J. P. Remington, Alfred B. Taylor, James T. Shinn, Henry N. Rittenhouse.

From the Maryland College.—George W. Andrews, Oscar Monserrat, N. H. Jennings, Louis Dohme, John F. Hancock.

From the New York College.—P. W. Bedford, George C. Close, Isaac Coddington, David Hays, William Neergaard.

From the Massachusetts College.—Samuel M. Colcord, George F. H. Markoe, Robert R. Kent, Joel S. Orne, Benj. F. Stacy.

From the Chicago College.—Albert E. Ebert, Thomas Whitfield, N. Pierpoint, Dr. F. Mahla, E. H. Sargent.

From the California Pharmaceutical Society.—William T. Wenzell, Wm. A. Perkins.

From the Newark Pharmaceutical Association.—John B. Lee, Ransford W. Vandervoort, Alex. Havenstein, Chas. W. Badger, Edward P. Nichols.

New Jersey Pharmaceutical Association.—Joseph De la Cour, Jr., Randal Rickey, William Rust, Ed. F. Kelly and Julius Fehr.

Alumni Association of the Philad. Coll. Pharm.—Charles L. Jefferson, Joseph A. Souder, S. Mason McCollin, P. Joseph Carberry and Clemmons Parrish.

Alumni Association of the Massachusetts College.—Judson R. Cheney, Thomas Doliber, John C. Lowd, Charles A. Tufts, Abijah B. Winfield.

The Executive Committee reported the following applications for membership, all of whom had complied with the requirements of the Constitution. A ballot being ordered, P. W. Bedford and Edwin McC. Boring, tellers, reported their unanimous election :

Simon N. Jones, Louisville, Ky.
James E. Brown, "
Peter Nodler, Covington, Ky.
John M. Cutler, Albany, N. Y.
James N. Hedenberg, Danville, Pa.
J. Otis Barnaby, Brooklyn, N. Y.
Thos. J. Barnaby, Elizabeth, N. J.
Albert R. Griffith, Oil City, Pa.
Wolfred D. E. Nelson, Montreal, Canada.
Chas. M. Hostetter, Pittsburg, Pa.
Theo. W. Ruete, Lockport, N. Y.
Linton Smith, M.D., Wilmington, Del.
Paul L. Viallon, New Orleans, La.
H. L. Sherwood, Po'keepsie, N. Y.
Wm. H. Egle, Harrisburg, Pa.
Wm. H. Naulty, Little Rock, Ark.
Frank L. Steele, Memphis, Tenn.
Alfred Ritson, Columbus, Ohio.
T. Smith Glenn, St. Louis, Mo.
Wm. Hall, Wickham, N. Y.

Eugene A. Rau, Bethlehem, Pa.
William Krause, Philad.
Wm. Trindle, "
Jos. T. Thibodeaux, Thibodeaux, La.
Marshall C. Hall, Fredericksburg, Va.
John A. Webb, Baltimore, Md.
Z. W. Cromwell, Washington, D. C.
A. W. Nolting, Richmond, Va.
Chas. G. Parker, Mobile, Ala.
Clarence A. Evans, Muncy, Pa.
F. A. Graefle, Hagerstown, Md.
J. A. O'Donnell, Washington, D. C.
John H. Hancock, Baltimore, Md.
John F. Huddart, Philad.
John F. Cahill, Cardenas, Cuba.
Judson S. Jacobus, Chicago.
Hosea W. Palmer, Hyde Park, Ill.
A. W. Duke, Baltimore, Md.
Alfred A. Hubley, Lancaster, Pa.
Edward A. Smith, Baltimore, Md.

The roll of members was now called by the Secretary, the entire attendance being 106 members.

The Reports of Committees being in order, the following were laid on the table:

The reports of the Executive Committee and the Permanent Secretary.

The report of the Committee on the Progress of Pharmacy.

“ “ Committee on Scientific Queries.

“ “ Constitution and By-Laws.

“ “ Secretary on Legislation.

No reports were received from the Committees on Drug Market, on Unofficial Formulas and on Photograph Album:

The Chairman of the Executive Committee, Mr. Wiegand, being absent (because of an accident), Mr. Taylor of the Business Committee read his report, which was accepted and referred. The Permanent Secretary then read his annual report of the publication of the Proceedings, etc., which was accepted.

[The Executive Committee report that the Volume of Proceedings was issued early in February, that a number of applications for membership were made in the interim, and that more attention is needed to the finances of the Association. The chief burthen of the report is, however, its Obituary notices. Eight members have succumbed to the pale messenger since last report, viz.:

Prof. F. F. Mayer, formerly of the New York College of Pharmacy, is supposed to be dead, as the most diligent inquiry of his friends in New York have not availed to find his whereabouts. When last seen, between Christmas and New Year, he was suffering much from neuralgia, to which he was a victim, and his friends consider him as dead. It seems hard to reconcile so sad a fate as death without the knowledge of friends, to one so well known. Several of his papers are scattered through this Journal, and give evidence of marked ability.

William Ellis Jenkins, of Boston, a graduate of the Massachusetts College, died Dec. 6th last. He was a member of four years' standing, and his friends testify to his professional skill and personal worth.

Arthur W. Gabaudan, of New York. (See page 191, vol. xlii.)

Peter V. Coppuck, of Mt. Holly, N. J. (See page 92, vol. xlii).

John Sylvester Benzinger, of Baltimore, died Dec. 14, 1869, and had been a member nine years.

William H. Muller, of Chicago, Ill., died in the 43d year of his age. He was educated in Hameln as a pharmacist, and graduated at the University of Göttingen.

Henry G. D'Evers, of Chicago, Ill., was born in Hanover, Germany, studied at the Universities of Giessen, Göttingen and Jena. He emigrated to America in 1848, residing successively in New York, Sandusky, Buffalo and Chicago, and was a pharmacist in good esteem. His death was the result of accident. He leaves a wife and three children.

Herschel Parker, of Brooklyn, N. Y., died on the 8th of August, 1870, in his 41st year. He was a pharmacist in good standing, and has been three years a member of this Association.

The report also contains notices of *M. Boullay* and *M. Robinet*, both of whom were honorary members of the Association, but, as we have published obituary notices already (see page 93 and 192 of this volume) it is not necessary to repeat them.]

[The report of the Permanent Secretary to the Executive Committee contains various information of interest relative to memberships, the stock of Proceedings, the distribution of the Proceedings to American and foreign libraries and societies, and the expenses of the year. The Secretary advises the reduction of the number of complimentary copies distributed, as various bodies publishing journals and editors of journals either fail to exchange altogether or do it so irregularly that no advantage comes to the Association from a continuance of the exchange.]

Mr. Taylor then offered the following:

Resolved, That the Secretary be requested to telegraph a fraternal message to the British Pharmaceutical Conference, now in session in Liverpool.

The delegations were then called on to name each a member to serve on the Nominating Committee.

Samuel M. Colcord, David Hays, James T. Shinn, J. P. Han-

cock, A. E. Ebert, W. T. Wenzell, Randall Rickey, J. L. Carberry, Charles A. Tufts, Edward P. Nichols, were appointed by the delegations, and Fleming G. Grieve, John A. Vandegrift, and Matthew F. Ash by the President.

The President now read his annual address.

[The President, after some generalities in relation to reunion with friends, etc., said that the national character of our Association renders it of the greatest importance that the conduct of its affairs be marked with wisdom and foresight, and that now, while prosperity surrounds us, that we build our structure on a sound financial basis. This is not yet attained, and although we are out of debt, it is due to the efforts of the Treasurer in anticipating the coming income. Our usefulness depends on ample resources. Social pleasures are desirable, but the development of energy and talent in the members is more so. Officers of the Association are embarrassed by a deficient treasury, and are overworked in consequence. We owe it to our own self-respect that these officers be better paid. The necessity of increasing the annual dues, as will be brought forward by the Committee on the Constitution, will be apparent. Under the present dues each member pays but fifty cents more than he receives in the form of printed matter, which will not support the Association. The idea of life memberships, based on a fair contribution, is fully discussed, and advocated provided the capital be funded.

The President also recommends funding the initiation and certificate fees, and using the income as prizes for scientific research. He also advocates the propriety of members offering prizes through the Association. That the annual dues *should* fully pay the annual expenses is assumed as a truism.

The President compliments the Executive Committee, the Secretary, and Mr. Slade the Phonographic Reporter, for the excellence of the volume of Proceedings. He also refers to the report on the Progress of Pharmacy, and advocates that the Chairman be furnished with the necessary journals by subscription, and not be dependent on the very irregular exchange of those journals with the Proceedings.

The importance of having a working Committee on Adulterations is advocated as a duty to the public and physicians.

"No sin deserves more severe rebuke or more prompt punishment than that which silently and unknown works mischief and death upon the suffering invalid.

"Our State laws are defective and Public Justice is blind, but if we had an active Committee to ascertain facts of this nature, its annual report would doubtless exert a powerful influence to check this growing and unblushing evil, would place us fair upon the record, give our lawmakers a basis to work upon, and would result in great practical benefit to all."

Dishonesty in pharmacopœial preparations is pointed out as properly within the duty of this Committee.

The President suggests the preparation of another general index; advocates the appropriation of time to the exhibition of specimens and apparatus. He also advocates having an agent or honorary secretary in each State, to collect the dues of members and distribute the Proceedings, as an improvement upon the present method of collection and distribution; and he hopes, despite the excellent reasons given by Prof. Maisch for resigning the duties of Secretary, that he will continue his services.

In reference to the law suggested last year, he believes further and more definite action is needed. In reference to the distribution of the Proceedings gratuitously, that more care be necessary in complimentary presentation; that the Association should not wait for invitations in deciding on the places of meeting, and that the Local Secretary should, if necessary, provide needful accommodations at the expense of the Association.

The President calls attention to the sparsity of Southern members, and, after making full allowance for the influence of the war and interruption of business, he considers the 45 members from the 13 Southern States as far too small compared with the number of excellent apothecaries in Southern cities, and he attributes it to the fact that the Association has never met there and excited an interest, and suggests that it should do so.

The President, in speaking of the relations of pharmacutists with physicians, thinks that the influence of educated and skilled physicians in demanding honesty, carefulness and thorough education on the part of druggists, would be a great step towards

furthering the aims of this Association in promoting a desire among apothecaries for a higher professional standing, based on thorough qualification.

He alludes to the fact that several medical schools have undertaken to teach and graduate young men in Pharmacy, without a sufficient experience, or perhaps no experience, in the shop, thus leaving out the very foundation of the edifice of pharmaceutical education, and unsettling the value of the Diploma.

"If Universities are to confer degrees in Pharmacy without requiring the necessary qualifications, or if they are to be their own judge of what constitutes qualification, the teachers themselves being ignorant of what should be required, then it is time for earnest work on our part, and for the establishment by law of what an apothecary shall know and be capable of doing."

The President, alluding to the national jubilee proposed to commemorate the Centennial Anniversary of our Nation's Birth, advocates the suggestion of Prof. Maisch, that an international congress of pharmacutists be held in Philadelphia in 1876, about that time.

In conclusion, judging from the good fruits yielded to the North-west from the meeting in Chicago, he thinks a meeting in New Orleans and in San Francisco will have a most beneficent influence, uniting all in a common purpose for a common good. Our rapidly increasing numbers and intellectual resources, directed to investigation and stimulating education and a love of knowledge, gives promise of a bright and useful future. Great work requires great effort, and whilst anticipating the exertion of the members, the President cheerfully promises his co-operation.]

The address was listened to with marked attention, and, on motion of a member, was referred to a Committee of five, consisting of Samuel M. Colcord, Isaac Coddington, John J. Thompson, Charles A. Heinitsh and James T. Shinn.

The meeting then adjourned to 9 o'clock to-morrow morning.

Second Session—Wednesday Morning, Sept. 14th.

The meeting was called to order by the President at 9 o'clock. The Secretary read the minutes, which were adopted. The Sec-

retary then stated that early last evening he had sent the following message by the Atlantic cable:

"Pharmaceutical Conference, Liverpool:

"Fraternal greeting of American Pharmaceutical Association.

"MAISCH, Secretary."

Last evening, between 9 and 10 o'clock, President Sargent received the following message:

"To President of American Pharm. Association, Baltimore:

"The most successful meeting ever held sends hearty fraternal greeting.

PRESIDENT BRITISH PHARM. CONFERENCE."

The Secretary also read the following telegram, directed to him as Secretary:

"City of Fort Wayne presents compliments, and desires to state that she will be at home during month of September, 1871.

"H. V. SWERINGEN."

The Business Committee offered the following:

Resolved, That the Faculty of the University of Maryland, the Faculty of the Washington Medical College, and the Medical profession generally, be invited to be present at the sessions of the Association.

The Treasurer read his report. [We have not seen this.]

The Chair appointed the following Committee to audit the accounts: Samuel M. Colcord, of Boston, Thomas Whitfield, of Chicago, and W. A. Perkins of San Francisco.

The Nominating Committee presented the following report:

For President,

RICHARD H. STABLER, Virginia.

First Vice-President,

FLEMING G. GRIEVE, Georgia.

Second Vice-President,

JAMES G. STEELE, California.

Third Vice-President,

EUGENE L. MASSOT, Missouri.

Treasurer,

CHARLES A. TUFTS, New Hampshire.

Permanent Secretary.

JOHN M. MAISCH, Pennsylvania.

Local Secretary,

(To be filled at last session).

Executive Committee,

THOMAS S. WIEGAND, Chairman,	. . .	Pennsylvania.
MATTHEW F. ASH,	. . . . .	Mississippi.
ALPHEUS P. SHARP,	. . . . .	Maryland.
CHARLES H. DALRYMPLE,	. . . . .	New Jersey,

*Permanent Secretary ex officio.**Committee on Progress of Pharmacy,*

WILLIAM T. WENZELL, Chairman,	. . .	California.
THOMAS J. GREATER, . . . . .	. . .	California.
WILLIAM SAUNDERS, . . . . .	. . .	Canada West.
LOUIS DOHME, . . . . .	. . .	Maryland,

*Local Secretary ex officio.**Committee on the Drug Market,*

JOHN MCKESSON, JR., Chairman,	. . .	New York.
WILLIAM GEARY, . . . . .	. . .	California.
JOHN J. THOMSEN, . . . . .	. . .	Maryland.
RICHARD M. SHOEMAKER, . . . . .	. . .	Pennsylvania.
FREDERICK A. KEFFER, . . . . .	. . .	Louisiana.

Committee on Scientific Queries,

ALBERT E. EBERT, Chairman,	. . .	Illinois.
C. LEWIS DIEHL, . . . . .	. . .	Kentucky.
WILLIAM PROCTER, JR., . . . . .	. . .	Pennsylvania.

Business Committee,

ALFRED B. TAYLOR, Chairman,	. . .	Pennsylvania.
E. H. SARGENT, . . . . .	. . .	Illinois.
JAMES T. SHINN, . . . . .	. . .	Pennsylvania.

On motion of the Business Committee, a ballot was ordered for the Presidential nominee, and Messrs. Whitfield and Wenzell were appointed tellers, who reported the election unanimous.

Pending the action of the tellers, the Secretary read an invitation to the Association, from Messrs. Gail and Ax, to visit their tobacco manufactory, 28 Barre street.

The invitation was accepted, and the thanks of the Association returned.

The Business Committee moved that the President be authorized to deposit an affirmative vote for the remaining candidates, which being done they were declared duly elected.

The President now appointed Messrs. Procter and Colcord to conduct the President elect to the chair, when the President arose and introduced Dr. Richard H. Stabler to the meeting, who then made a few appropriate remarks.

The Secretary read the introduction to the report of the Committee on the Progress of Pharmacy, which with the report was referred to the Executive Committee.

The Secretary read the Report on the Constitution and By-Laws, which was accepted. Various suggestions being made, it was ordered that the report be recommitted to the Committee, who were to receive the suggestions of the members in writing, and report at a future sitting.

The report of the Secretary on Legislation was read and accepted.

It was moved and adopted that the Laws on Pharmacy be printed in the Proceedings, and that the other suggestions contained in the report be referred to the Committee on the President's Address.

It was, on motion, ordered that Dr. Squibb have the floor at 12 o'clock to-morrow to read papers and exhibit specimens.

On motion, a Committee of three was appointed to consider the time and place of next meeting, to which service the President appointed Henry Haviland of New York, Thomas Whitfield of Chicago, and Fleming G. Grieve of Georgia.

On motion of the Business Committee, a Committee of Three was appointed by the Chair, consisting of William S. Thompson of Baltimore, William T. Wenzell of San Francisco, and G. F. H. Markoe of Boston.

Albert E. Ebert read the report of the Committee on Queries, which, being approved, was referred for publication :

The Committee on Queries report the following list for the ensuing year, with the names of those who have accepted them for examination.

ALBERT E. EBERT, *Chairman.*

1. Are the preparations of rennet identical with those of pepsin, and can the former be prepared only from the fourth stomach of the calf?

Accepted by Clemmons Parrish, Philadelphia.

2. How may camphor be reduced to a fine powder, and retained in a pulverulent condition?

Accepted by John C. Lowd, of Boston, Mass.

3. On examination of the meat extracts of commerce, what is the actual

nutritive value of the preparations, and how do they compare one with another?

Accepted by Albert E. Ebert, of Chicago.

4. What proportion of mercury is contained in the blue pill of the market?

Accepted by Charles H. Bassett, of Boston.

5. What is the quality of bees' wax in the market, and what are the best means of detecting its adulterations?

Accepted by John J. Thomsen, of Baltimore.

6. To what does poke root (*Phytolacca Radix*) owe its activity? Can the active principles be isolated?

Accepted by J. F. Hancock, Baltimore.

7. Ammonio citrate of bismuth loses its solubility to a great extent by age. Can any other salt of bismuth replace this in the desirable quality of solubility, and at the same time be more stable in composition?

Accepted by Prof. Geo. F. H. Markoe, of Boston.

8. To what extent are the essential oils adulterated or sophisticated? How may impurities be detected?

Accepted by William S. Thompson, of Baltimore.

9. Glycerin of various grades is furnished by the manufacturers. In what respect do they differ? What are the usual impurities of glycerin, and what are the best practical tests?

Accepted by Joseph P. Remington, of Philadelphia, Pa.

10. What is the best practical method for making suppositories extemporaneously?

Accepted by R. B. Ferguson, Washington, D. C.

11. Is a liquid preparation of hydrate of chloral desirable? If so, what is the best vehicle to preserve it from change and render it agreeable for administration?

Accepted by Prof. Geo. F. H. Markoe, of Boston.

12. Pancreatic juice has been highly recommended to assist the assimilation of fat in the human stomach. In what manner is the fluid obtained, and what permanent preparations of it can be made that will be suitable for administration?

Accepted by J. F. Hancock of Baltimore, Md.

13. To what extent are the oils of pea nuts, cotton seed, mustard seed or of other seed sold for olive oil? and how can they be readily detected when so substituted?

Accepted by Henry N. Rittenhouse, of Philadelphia.

14. What is the active principle of wahoo bark (*Enonymus atropurpureus*)?

Accepted by Charles E. Dohme, of Baltimore.

15. Are the California wines and brandies suitable for medicinal use? Are the wines and brandies now supplied to the Atlantic cities from California as good as can be obtained from that source?

Accepted by William Searby, of San Francisco.

16. What system of apprenticeship is best adapted to this country? What amount of preliminary education should be required of such ap-

prentices, and what means should be employed to render their apprenticeship profitable to themselves and satisfactory to their preceptors?

Accepted by Samuel M. Colcord, of Boston.

17. What quantity of castor oil is produced annually in the United States, and to what extent is the American oil put up in packages and sold in imitation of the East India oil?

Referred to Francis X. Crawley, of St. Louis, Mo.

18. To what extent may traffic in fancy goods, liquors and cigars be regarded as compatible with legitimate pharmacy?

Accepted by Samuel Campbell, of Philadelphia.

19. Tincture of blood root deposits a sediment on standing. Is the activity of the preparation thereby impaired, and is there a more suitable alcoholic strength for this tincture?

Accepted by Louis Dohme, of Baltimore.

20. Does the commercial subcarbonate of iron of the market conform to the requirements of the United States Pharmacopœia? If not, in what respect does it differ?

Accepted by P. W. Bedford, of New York City.

21. Granulated effervescing compounds are sold by druggists under popular names, and the demand for them is constantly increasing. Yet these compounds are known to be different from the preparations represented by the labels. Give a practical process for the preparation of such as are believed to possess merit.

Accepted by Samuel Campbell, of Philadelphia.

22. Is tincture of opium as usually dispensed uniform in morphia strength? What range is covered by the differences existing in samples obtained from reputable sources?

Accepted by L. M. Rice, of New York City.

23. What are the best containers, or what other precautions can be devised for poisonous drugs to lessen the liability to mistakes in dispensing or handling them?

Accepted by William C. Bakes, of Philadelphia.

24. The purity of commercial tartar emetic has been questioned. To what extent, if at all, is the article impaired, and in what respect does it usually fail to conform to the official standard?

Accepted by Joseph P. Remington, of Philadelphia.

25. What medicinal articles are in popular use among the Indian tribes, and what properties are ascribed to such as are unknown to our commentaries?

For general acceptance.

26. Is there a practicable and cheap process for isolating cantharidin? and in what proportion should it be substituted for cantharides in the various vesicating preparations?

Accepted by Albert E. Ebert, of Chicago.

27. An article has been introduced into the market under the name of African Saffron. What is its source and botanical history?

Accepted by John M. Maisch of Philadelphia.

28. Spirit of nitrous ether varies greatly as obtained from different manufacturers. By what practical process may the proportion of nitrous ether in the spirit be estimated, and is the alcoholic strength of the U. S. Pharmacopœia a proper one? *Accepted by F. Mahla, of Chicago.*

29. The aromatic sulphuric acid of the United States Pharmacopœia is objectionable in that it deposits upon standing, and when diluted with water, resinous and coloring matter separates. How can the formula be modified to overcome these objections?

Accepted by Thomas Doliber, of Boston.

30. Medicated and aromatic waters, prepared by rubbing essential oils with carbonate of magnesia, are found to contain soluble salts derived from the magnesia. What substance can be substituted for the magnesia that will furnish a water free from foreign matter?

Accepted by S. A. D. Shepard, of Boston, Mass.

31. What proportion of magnesia is contained in the solution of citrate of magnesia as obtained from different sources, and how do these solutions differ from the official?

Accepted by Prof. Geo. F. H. Markoe of Boston, Mass.

32. In what respect does deodorized tincture of opium differ from the elixirs of opium in the market? The former prepared by the U. S. Pharm. process gradually deposits a dark colored sediment. Are any of the active principles thrown down in connection with the deposit?

Accepted by Charles E. Dohme, of Baltimore, Md.

33. What is the comparative value of carbolic acid and other disinfectants and antiseptics? Which is the best disinfectant for general use?

Accepted by Edward C. Jones, of Philadelphia.

34. Prof. Wormly has isolated two active principles from yellow jasmín (*Gelsemium sempervirens*), one of which he calls gelsemine, and the other gelseminic acid. How may these principles be isolated in quantity? What is the antidote to the poisonous effects of this drug?

Accepted by Joseph M. Hirsh, of Chicago.

35. Is the ordinary commercial alcohol of the market sufficiently free from fusel or grain oil for pharmaceutical use?

Accepted by N. Pierpoint, of Young America, Illinois.

36. It is found that ordinary menstrua do not hold polygalic acid of senega in solution, and that well made fluid extracts of senega from good specimens of the drug are liable to gelatinize in cold weather. What menstruum is best adapted for holding all the active principles of senega in permanent solution, and excluding pectin and other useless substances?

Accepted by H. N. Rittenhouse, of Philadelphia.

37. What is the best formula for solution of citrate of magnesia? Can a permanent solution of it be made?

Accepted by E. H. Sargent, of Chicago.

W. S. Thompson was excused from serving on the Committee on Specimens, and Ferris Bringhurst appointed in his place.

The business involved in the 1st resolution laying over from last year, at page 87 of the Proceedings for 1869, was referred, for consideration, to the Committee on By-Laws and Constitution.

Albert E. Ebert referred to the fact that the Committee on Unofficial Formulas had failed to report for several years.

After some discussion of the matter Dr. Squibb moved that hereafter this Committee consist of but one member, which being adopted, the Chair appointed J. Faris Moore.

The reading of queries being called for, they were called in the order of their numbering, but owing partly to the members not expecting this arrangement, but few were prepared, having left their papers at their lodgings.

The Secretary stated that Dr. S. S. Garrigues, having been absent from home a large part of the year, had not been able to pursue the experiments necessary to a reply, and desired the subject continued.

Joseph L. Lemberger made some verbal remarks on query 13 and requested its continuance to him.

Albert E. Ebert gave as a reason for not replying to query 19 that he was quite unable to find any true *gillenia trifoliata* in the market. It was suggested that the root of *gillenia stipulacea* may be procured, which is a western plant of similar properties, which Mr. Ebert accepted.

The Auditing Committee made the following report, which was adopted :

"The Committee appointed at the 18th Annual Meeting to examine the accounts of the Treasurer for the past year respectfully report that they have carefully examined the accounts and vouchers thereto pertaining, and have found the same to be correct. They are happy to congratulate the Association on having its financial affairs in the hands of so faithful and able an officer."

Signed

S. M. COLCORD,

THOMAS WHITFIELD,

W. A. PERKINS.

} Committee.

The Treasurer's Report was then, on motion, adopted.

A volunteer paper by Joseph P. Remington, of Phila., on glycerin, was read by Albert E. Ebert, which was accepted and referred.

The valuable suggestions of this paper called forth some discussion.

The Executive Committee presented the names of the twenty-one applicants for membership. A ballot was ordered, Messrs. Lemberger and Hall were appointed tellers, who reported the unanimous election of the candidates, as follows :

John Calvert, San Francisco, Cal.	Robt. Lautenbach, M.D., Balt., Md.
Emlen Painter, " "	Richard Sappington, M.D., " "
William Geary, " "	Philemon S. Reed, Phila., Penn.
John W. Moffit, " "	Ransford W. Vandervoort, New-
James Frost, Vallejo, " "	ark, N. J.
Wm. Simpson, San Francisco, "	Wm. M. Littell, Newark, N. J.
Edward J. Richards, Haywards "	Charles Rice, New York City.
Alfred W. Test, Camden, N. J.	Albert P. Brown, Camden, N. J.
Elijah Button, Annapolis, Md.	Thomas H. Hazard, Richmond, Va.
John W. German, Balt., " "	M. Smith Hawkins, Salem, Ohio.
Thomas, Starr, New York.	Henry A. Suding, Baltimore Md.

On motion, it was ordered that when this session adjourns it shall be to meet at 3½ o'clock this afternoon.

S. Mason McCollin made some verbal remarks on query No. 12, on pepsin, stating some of the difficulties he had had and requesting its continuance to him for another year.

Secretary Maisch read a paper by S. P. Duffield, PhD., of Detroit, on aconite poisoning, which was accepted for publication. Then adjourned.

Third Session.

The meeting was called to order by the President, and the minutes read by the Secretary and adopted.

James T. Shinn read a reply to query No. 7, on liquid preparations of Guaiac Resin, which was referred for publication.

Query No. 10 was continued to Edward C. Jones, he having failed to answer owing to sickness.

W. Procter, Jr., replied to query 25, on the Morphiometrical Assay of Opium, which was referred, and also a partial reply to query 26, on *Abies Canadensis*.

Charles L. Eberle made some verbal remarks on suppositories,

which elicited considerable discussion in reference to the influence of wax and other additions to butter of cacao on its fusing point.

Benj. F. Stacy read an essay on the honey trade in reply to query No. 20; referred for publication.

S. M. Colcord, Chairman of the Committee on the Constitution and By-Laws, having moved and carried to make certain verbal alterations, the Business Committee moved that the Constitution and By-Laws, as now presented by the Committee, be adopted, which was agreed to.

In view of the failure of so many reports the Business Committee offered the following resolution, which was passed:

Resolved, That this Association views with regret the neglect on the part of Chairmen of Committees to furnish reports; as also the failure of members to answer queries accepted by them, and hereby expresses its disapprobation of such neglect.

The Secretary read a volunteer paper by James M. Caldwell, of Philadelphia, in relation to the propriety of taking measures to secure a larger membership in the Southern States, which was referred to the Executive Committee.

A resolution was passed inviting the Faculties of the University of Maryland and the Washington Medical College to attend the meetings of the Association.

The Convention then adjourned till to-morrow morning at 10½ o'clock.

Fourth Session.—Thursday morning, Sept. 15th.

President Stabler called the meeting to order at 11 o'clock, when the Secretary read the minutes of 3d session, which were adopted.

Charles L. Eberle read a paper on Suppositories, in reply to query No. 29.

Secretary Maisch read a paper by C. L. Diehl, of Louisville, on indigenous drugs in reply to query 27, which was referred for publication.

William J. M. Gordon, in a letter read by the Secretary, stated that he had not been able to reply to query No. 11, but believed by another meeting he would be able to make a satisfactory report. The subject was continued to Mr. Gordon.

Dr. Wilson H. Pile read a paper on Baumé's hydrometer, illustrated by diagrams and experiments; referred for publication.

Dr. Squibb now proceeded to read his paper on Rhubarb root, which he illustrated with two entire cases of that drug, of unusually good quality.

Dr. Squibb also read a paper on Fluid Extracts and their Menstrua, in which the results of accurate experiments in repercolation are detailed, both of which were referred for publication.

The Chairman of the Business Committee offered the following resolutions, which were unanimously adopted:

Resolved, That the members of the Association tender their warmest thanks to Messrs. Gail and Ax for the courteous attention and hospitality extended to them at their mammoth tobacco works on the occasion of a visit by special invitation.

Resolved, That the thanks of the visiting members of the American Pharmaceutical Association in attendance at the Eighteenth Annual Meeting, are hereby tendered to the pharmacutists of Baltimore and their friends, especially the Reception Committee and the Local Secretary, for their endeavors to render our stay in "the Monumental City" pleasant and social. They will return to their homes with pleasant remembrances of their visit.

Resolved, That the thanks of the members of the American Pharmaceutical Association are hereby tendered to Messrs. Thomas Kensett & Co., of Baltimore, for the courtesy extended on the occasion of a visit to their extensive [fruit canning] works.

Resolved, That the thanks of the members of the Association are hereby tendered to Messrs. Maltby & Co., of Baltimore, for the courtesy extended on the occasion of a visit to their extensive oyster [canning and shell lime burning] establishment.

Resolved, That the sincere thanks of this Association are eminently due and are hereby tendered to the Faculty of the University of Maryland for the free use of their (Lecture) Hall for the purposes of the Eighteenth Annual Meeting of this Body.

The following report was then read and laid on the table for publication:

The Committee appointed to consider the time and place for holding the next annual meeting respectfully report that our next annual meeting take place at St. Louis, Missouri, on the second Tuesday in September, 1871, at three o'clock P. M.

(Signed)

HENRY HAVILAND, Chairman.

The meeting then adjourned to meet at 3½ o'clock this afternoon.

Fifth Session.

The meeting was called to order by President Stabler at 3½ o'clock P. M. The Secretary read the minutes of the fourth session.

Mr. M. F. Ash, on behalf of the Executive Committee, presented the following list of candidates for membership:

E. C. Lewis, Rutland, Vermont.	John M. Lloyd, Cincinnati, Ohio.
Albert W. Higgins, "	Carlos E. Day, Brooklyn, N. Y.
Wm. H. Osborn, Baltimore, Md.	J. B. H. Campbell, Cumberland, Md.
J. Newport Potts, "	J. Addison Sheets, Baltimore, "
Henry C. Holden, N. Adams, Mass.	H. W. Cady, Plattsburgh, N. Y.
Isaac H. Kay, Philadelphia, Pa.	Adam J. Gosman, Baltimore, Md.
E. H. Luckenbach, Bethlehem, Pa.	William Vincent, Brooklyn, N. Y.
Joseph Josselyn Estes, E. Abington, Mass.	Wilbur F. Thompson, Balt., Md.

The President appointed Messrs. Simms and Milburn tellers, who reported the unanimous election of all the candidates.

William Saunders read a paper on some Medicinal Plants of Canada, which was ordered for publication.

The Committee on Queries and Papers brought forward a paper by George S. Dickey, entitled "Practical Notes on the Pharmacopœia."

It was moved and passed, that this paper be returned to the author with the thanks of the Association, and the request to have it elaborated for publication, if he pleases to offer it.

The report of the Committee on the President's Address, and the Secretary's report on Legislation, were brought forward in the form of a series of resolutions, of which the following were adopted, viz.:

Resolved, That the Executive Committee be directed to furnish the Chairman of the Committee on the Progress of Pharmacy with such journals as he may designate for the compilation of his report.

Resolved, That Joseph P. Remington, Albert E. Ebert, and William T. Wenzell, shall constitute a committee on the adulteration and sophistication of drugs and chemicals for the ensuing year.

Resolved, That, in thankful remembrance of his former service to the Association, Mr. T. S. Wiegand be requested to prepare a general Index

of the Proceedings for the last ten years, to be published in the volume for 1871.

Resolved, That the President be directed to appoint an authorized agent, where needed, in the different States, for the collection of dues, distribution of Proceedings, &c., said agent to be designated by the Treasurer and Permanent Secretary of the Association. A list of the agents to be published in the Proceedings.

Resolved, That a committee be appointed to take into consideration the suggestion to invite the International Congress of Pharmacutists to meet in the United States in 1876, and report upon it in 1871.

Resolved, That a committee of five be appointed to report upon Legislative action upon Pharmacy and the drug trade in the different States of the Union.

Dr. Frederick Hoffman moved, "That a committee of three be appointed to draft an address of felicitation, embodying the kind sentiments of this Association on the occasion of the 50th anniversary of the North German Apothecaries' Association, and to forward this address in the name of the Association to the Permanent President, Mr. William Dankwortt, in Magdeburg."

This motion was carried, and Messrs. Hoffman, Maisch and Sargent appointed to carry it into effect.

Dr. Squibb moved that the 19th annual meeting be held at the place and time recommended by the Committee in the report read at the fourth session, which was carried.

Mr. Whitfield nominated Wm. H. Crawford, of St. Louis, for Local Secretary, and his election was carried.

Ferris Bringhurst read the report of Committee on Specimens, which was accepted and the Committee discharged.

Dr. Squibb, at the request of the Association, explained the process for making chloral hydrate, the properties of this compound, and its impurities, which was listened to with marked interest.

The President announced the following Committees, viz.:

As the Committee on Legislation, John M. Maisch, Secretary; Ezekiel H. Sargent, of Illinois; Robert S. McMurdy, of Albany, N. Y.; Henry J. Menninger, of Raleigh, N. C.; Matthew F. Ash, Jackson, Miss.

500 CONVENTION RELATIVE TO PHARMACEUTICAL EDUCATION.

As the Committee to report on the practicability of inviting the International Congress of Apothecaries to meet in the U. S. in 1876, William Procter, Jr., Albert E. Ebert, and Dr. F. Hoffman.

The Executive Committee presented the name of Mr. J. B. Duple, of Williamsport, Penn., for membership.

On motion, an affirmative ballot was deposited by the President for the candidate, and he was declared duly elected.

Mr. W. T. Wenzell read a paper on Pharmacy in California, which was referred to the Executive Committee.

Dr. Squibb moved that when we adjourn, we adjourn to meet in St. Louis next year, as provided for.

The thanks of the Association were given to the retiring officers, and the minutes read, when the meeting adjourned.

MINUTES OF THE CONVENTION OF DELEGATES FROM COLLEGES AND SOCIETIES OF PHARMACY, HELD IN BALTIMORE ON THE 14TH AND 15TH OF SEPTEMBER, RELATIVE TO PHARMACEUTICAL EDUCATION.

At a meeting of Delegates from Colleges of Pharmacy and Pharmaceutical Associations, held, in pursuance of the call of Maryland College of Pharmacy, in the hall of the College, on the evening of September the 14th, 1870,

On motion of Prof. Procter, Mr. Joseph Roberts, of Baltimore, was elected President *pro tem*.

On motion of Mr. Ebert, Mr. Wm. Wright, Jr., was elected Secretary *pro tem*.

On motion, the President appointed Professors Procter and Moore, and Mr. Thos. Whitfield, of Chicago, a Committee on Credentials.

The Delegates from *Maryland College* were Messrs. Joseph Roberts, J. Brown Baxley, and Profs. De Rosset, Claude Baxley, and J. Faris Moore.

From *New York College of Pharmacy*, Messrs. Geo. C. Close, David Hays, P. W. Bedford, Isaac Coddington and Wm. Neergaard.

From *Chicago College of Pharmacy*, Messrs. Albert E. Ebert, Thos. Whitfield, E. H. Sargent, N. Pierpoint and Dr. F. Mahla.

From *California Pharmaceutical Association*, Mr. W. T. Wenzell.

From *Philadelphia College of Pharmacy*, Professors Procter and Maisch, Messrs. A. B. Taylor, Henry N. Rittenhouse and Dr. Wilson H. Pile.

From *New Jersey Pharmaceutical Association*, Messrs. Randall Rickey of Trenton, Julius Fehr of Hoboken, Edward F. Kelly of Newark, William Rust of New Brunswick, Joseph De La Cour, Jr., of Camden.

From *Massachusetts College of Pharmacy*, Prof. Geo. F. H. Markoe, and Messrs. Chas. A. Tufts and Samuel M. Colcord.

The Secretary read the call issued by the Maryland College of Pharmacy April 21st, 1870.

On motion, it was resolved that each delegation nominate one of its members to form a Committee to nominate permanent officers. This Committee consisted of Mr. E. H. Sargent of Chicago, Mr. G. C. Close of New York, Prof. G. F. Markoe of Boston, Prof. J. Faris Moore of Baltimore, Mr. Julius Fehr of Hoboken, N. J., Mr. W. T. Wenzell of San Francisco, Mr. A. B. Taylor of Philadelphia.

On motion, resolved that the permanent officers consist of a President and a Secretary.

The Nominating Committee then proposed for President Mr. Joseph Roberts, of Baltimore; for Secretary, Prof. J. Faris Moore—who were unanimously elected.

The discussion commenced by the President stating the object for which the meeting was called, which was embraced in the following questions, which were read:

Shall there be an educational standard established, to be verified by an examination exacted from all proposing to learn the profession of Pharmacy?

If so, what shall that standard be?

Shall said examination be had prior to receiving the apprentice by his preceptor, or prior to receiving him as a student in a College of Pharmacy?

What term and style of apprenticeship shall be exacted?

What branches taught, what text-books used, and what form of examination adopted, that there may be an uniform standard for all graduating in Pharmacy?

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Shall there be an uniform scale of fees?

¶ Shall any diploma be recognized that is not based upon a regular apprenticeship as an apothecary?

Prof. Procter inquired if the final action of this Convention was to be recommended to the several bodies for their adoption, and subject to their action thereon.

The President replied that such was understood to be the intent of this Convention.

¶ On motion, it was resolved that the queries prepared by the Committee of the Maryland College of Pharmacy should be taken up seriatim.

The first query, "Shall there be an educational standard established, to be verified by an examination exacted from all proposing to learn the profession of Pharmacy?" was then taken up.

Mr. Taylor offered the following substitute:

Resolved, That there be an educational standard established prior to the admission of any student to attendance on the lectures of Colleges of Pharmacy.

Prof. Procter offered the following amendment, which was carried:

Resolved, That, in the opinion of this Convention, more attention to the preliminary education of those who propose to enter the business of pharmacentists is needed, and it is earnestly recommended to the Colleges and Societies of Pharmacy to urge their members and the profession of the United States generally to give greater care to this subject in taking apprentices.

Mr. Sargent moved that a term of service of four years in a dispensing drug store be recommended to be exacted from students in Pharmacy before coming up for final examination. Carried.

Resolved, That we recommend that apprentices shall not be taken under sixteen years of age, and shall be twenty-one years of age before being entitled to receive their diploma.

Carried.

On motion of Mr. Sargent, a Committee was appointed to take into consideration the propriety of making this a permanent organization, to hold its meetings at the same time and place as the meetings of the American Pharmaceutical Association. Carried.

Prof. Procter suggested to the Committee that Pharmaceutical societies be included in the organization, even although not actually teaching Pharmacy.

On motion of Mr. Bedford, it was resolved, that when this meeting adjourns, it adjourn to meet at the close of the second session, to-morrow, of the American Pharmaceutical Association, providing there is time, and if not, to meet here in the evening, at 7½ o'clock.

The meeting then adjourned.

WM. WRIGHT, JR.,
Secretary *pro tem*.

The adjourned meeting, on the evening of Thursday, Sept. 15th, 1870, was called to order by the President, Mr. Roberts. The minutes of the adjourned meeting were then read, and, on motion of Prof. Moore, Dr. Squibb was added to the New York Delegation, and, on motion of Mr. Hays, Mr. E. L. Milhau was also added to the same delegation.

On motion of Prof. Moore, the question, "What branches shall be taught?" was discussed.

Moved and seconded that Dr. Hoffman, of New York, and Dr. R. H. Stabler, of Alexandria, Va., be invited to a seat and to take part in the discussions. Carried.

The following resolution was then, after much discussion, carried:

Resolved, That the branches to be taught in Colleges of Pharmacy should at least include lectures on general chemistry, elementary botany, materia medica, and the general facts and principles of Pharmacy, and, when practicable, opportunity should also be provided for instruction in practical and analytical chemistry.

A discussion then ensued on the subject of "Text-books to be used," which, though long and interesting, ended in the subject being passed by.

It was then considered what form of examination shall be recommended to be adopted, that there may be an uniform standard for all graduates in Pharmacy, which resulted in the following being offered by Prof. De Rosset:

Resolved, That it is inexpedient at this time to recommend any uniformity in conducting examinations for graduation, but it is earnestly recom-

mended that whatever method be adopted should include questions both oral and written, and that particularly a familiarity with the physical properties of specimens should be insisted on.

Which was amended by Mr. Milhau moving the striking out of the first twenty words, leaving the resolution as follows :

Resolved, That it is earnestly recommended that whatever method be adopted should include questions both oral and written, and that particularly a familiarity with the physical properties of specimens should be insisted on.

In which shape the resolution was carried.

On motion of Prof. Procter, it was resolved that diplomas should not be recognised as evidence of sufficient qualification, unless based on four years' practical service in a dispensing shop.

On motion of Mr. Sargent, it was resolved that each College of Pharmacy be requested to take action on the questions presented at this Convention, and report to this body at its next meeting.

PHARMACEUTICAL NOTES.

MR. EDITOR :

Dear Sir,—The following may, perhaps, be found worthy a place in your journal:

Syrupus Tolutanus.

I have been using for some time the following way to make this syrup, and get a preparation with a stronger flavor than that made according to the U. S. Pharmacopœia.

I first make a syrup with 26 troyounces sugar and one pint water; then I take a well annealed bottle (sufficiently large) into which I put 2 drachms magnesia carbonate and 2 fluidounces tinct. tolu; shake well, add the boiling hot syrup, shake for a couple of minutes, and throw the mixture, hot as it is, on a paper filter. Of course, the funnel is covered with oiled silk, a glass plate, or other cover.

There are two objections to be made:

1st. The above method can only be followed at the imminent risk of bottles and funnel. If the bottles and funnel be rinsed

out with hot water previous to using them, the risk is lessened considerably.

2d. Syrups filter very slowly. The hotter the syrup is, the quicker it runs through; a ribbed funnel or, better, interposing small sticks of wood or glass rods between the filter and the funnel quickens filtration a good deal.

Syrupus Zingiberis

I prepare in the same way, that is to say, I substitute $1\frac{1}{2}$ fluid-ounce fluid extract of ginger for 6 fluidounces tincture of ginger (both representing the same quantity of rad. zingiber). Of course, I follow the proportions of the Pharmacopœia.

Camphoræ Pulv.

Camphor is easily enough reduced to powder by rubbing with a few drops of alcohol, but after a short time the powder will aggregate to crystals, which have to be rubbed down again.

I reduce camphor to a fine powder as above, but mix it then intimately with carbonate of magnesia (10 grains to the ounce is sufficient, but even 20 grains can do no harm). This powder never cakes or forms crystals.*

H. M. W.

Philadelphia, Sept. 17, 1870.

TARTAR EMETIC—AN ANTHELMINTIC.

By J. DABNEY PALMER, M. D.

My attention was directed to this property of tartar emetic by observing the discharge of worms in several cases in which the medicine had been employed for other indications. It is calculated to expel the round worm as effectually as the tape.

* [The idea of using carbonate of magnesia to prevent the coalescing of camphor powder was suggested several years ago by the late Henry F. Fish, in a paper read at the New York meeting of the Association. (See volume for 1860.) In his process, a drachm of the magnesian carbonate was used to disintegrate 16 ounces of camphor, by dissolving the latter in alcohol and pouring the solution into a gallon of water in which the magnesia was suspended, and letting the whole settle and collect in a filter.—EDITOR.]

A little girl of 5 years was threatened with inflammation of the brain, for which two or three doses of the antimonial were administered. After taking the last dose she passed a large round worm, and, as no anthelmintics had been given, the result was ascribed to the antimonial.

Mrs. M. gave her child hive syrup, and, in order to induce the child to take it, she took some herself, which was followed by the discharge of 18 inches of tape worm.

These worms were passed alive, owing, in all probability, to the minute quantity of tartar emetic taken.

Monticello, Florida, Oct. 1, 1870.

CHALK MIXTURE.

To the Editor:

Seeing several formulas for making chalk mixture in the *Journal*, I will give you one I have been using for two years past, and am well satisfied with:

R. Cretæ Praep.,	.	.	one troyounce.
Sacchari,			
Pulv. G. Acaciæ,	.	.	each one-half troyounce.
Ol. Cinnamomi,	.	.	fifteen drops.

Mix in the usual manner [with a pint of water].

Respectfully,
Pottsville, Sept. 13, 1870.

WILLIAM H. ROBINSON.

CRYSTALLIZATION OF SULPHO-CARBOLATE OF QUINIA.

By C. J. RADEMAKER, M. D.

Having had occasion to prepare sulpho-carbolate of quinia, for hospital use in this city, the following process was resorted to:

Crude sulphocarbolic acid was saturated with plumbic carbonate, the sulphocarbolate of lead crystallized, and decomposed with sulphate of quinine. The solution of sulphocarbolate of quinine filtered and evaporated, but it was found almost impossible to crystallize the salt, owing to the gelatinous condition of

part of the solution, which adhered to the small amount of crystals formed. The gelatinous mass was redissolved in alcohol and set aside to evaporate spontaneously, with the same result, it being found impossible to remove the crystals with any degree of nicety from the gelatinous mass.

I then made a solution of sulphocarbonate of quinine of definite strength, a teaspoonful of the solution representing 2 grains of the crystallized salt, or as near 2 grains as I could calculate from the amount of substance used. The liquid was composed of three parts water and 1 part alcohol, and set aside for prescription use. In about 4 or 5 weeks I noticed small crystals forming, which gradually increased in size, the large crystals resembling those of perchloride of iron. Under the microscope they made a beautiful prismatic appearance, but to what system of prisms they belonged I was unable to determine. Part of the crystals were taken out of the bottle and examined, and found to be sulphocarbonate of quinine.

In about two months about one-third of the salt had crystallized out of the solution. The salt was freely soluble in water, but slightly soluble in alcohol, and not deliquescent.

Louisville, Oct. 6, 1870.

AMOUNT OF ARSENIC IN PHOSPHORUS OF COMMERCE.

By C. J. RADEMAKER, M. D.

Frequently preparing dilute phosphoric acid according to the process of the U. S. P., I always pass a current of sulphydric acid through the solution, in order to free it from all substances precipitable by that agent in acid solutions, and invariably obtain a yellowish precipitate, which upon examination proves to be sulphide of arsenic.

In order to find the amount of arsenic present in a given quantity of phosphorus the following process was resorted to:

One hundred grammes of phosphorus were oxidized with nitric acid, the solution diluted and the arsenic precipitated as a sulphide (AsS_3) by means of sulphydric acid, the solution allowed to rest for 6 days. The precipitated sulphide of arsenic was collected on a filter and washed, transferred to a small evaporat-

ing dish and oxidized with nitric acid, and reduced by means of sulphurous acid to arsenious acid, and precipitated in the form of AsS_3 , by means of sulphydric acid; the precipitate digested with ammonia, in order to free it from the small amount of sulphur present, the solution filtered from the undissolved matter, and evaporated, dried and weighed, and found to weigh 15 grains, or nearly one gramme.

Louisville, Oct. 6, 1870.

ON SULPHO-CARBOLATE OF ZINC.

By A. B. LYONS, M. D.

Editor Amer. Journ. Pharmacy:

Dear Sir,—Having had occasion several times to prepare zinc sulphocarbolate, I have adopted the following process as simple, economical, and in every respect satisfactory. A crude sulphocarbolic acid is first prepared in the usual way, by heating together sulphuric and carbolic acids—seventeen parts of the former to sixteen of the latter. This is diluted with ten times its volume of water, and saturated with carbonate of lead. Into the filtered solution of sulphocarbolate of lead is introduced a quantity of pure granulated zinc equal in weight to the carbolic acid employed. At the end of twenty-four hours the solution will usually be found free from lead, giving no precipitate with sulphuric acid or potassium iodide. When quite freed from lead, as indicated by these tests, the solution is decanted, heated to boiling, filtered, and evaporated to a small bulk to crystallize; or the evaporation is carried to complete dryness, the salt being obtained in the granular form. The salt procured in this way is of necessity free from sulphate, and yields fine large colorless crystals without any empyreumatic odor.

Detroit, Mich., Oct. 11, 1870.

NEW FORMULA FOR SYRUP OF CITRIC ACID.

By BENJ. LILLARD, Nashville, Tenn.

This syrup, as prepared in accordance with our National Pharmacopœia, does not always (even when combined with skilful

hands) present a beautiful appearance. And having noticed in a former number of the 'Journal' a request that "each and all contribute something for the Committee of Revision for the next edition of the Pharmacopœia," I have been induced to send an original formula, which yields a prettier and more stable preparation, in less time and with greater ease.

Syrup of Citric Acid.

Take of Citric Acid, in fine powder,	Sixty grains.
Water,	A sufficient quantity.
Syrup,	Sixteen fluidounces.
Spirit of Lemon,	Thirty minims.

Dissolve the citric acid in the water, add the syrup and spirit of lemon, shaking well until they are thoroughly mixed.

When convenient, hot or warm water may be used. I have used the syrup made by this formula for over eighteen months, including two summers in this climate, and have found it to retain its brilliancy and flavor better than when prepared by the old formula.

GLEANINGS FROM FOREIGN JOURNALS.

BY THE EDITOR.

Preparation of Bromide of Sodium. By M. Castelhaç. The process which the author finds best is to transform bromine into bromide of ammonium, separating any iodine present, as iodide by crystallization in the mother-liquors, and afterwards decomposing this bromide by an equivalent quantity of carbonate or of caustic soda deprived of sulphate and chloride. The residue of the reaction forms a solution in water which, evaporated hot, deposits little cubical crystals of anhydrous bromide of sodium.

This process, which gives at once bromide exempt from bromate, has the advantage of not losing the bromide in the precipitates from incomplete washing on a large scale. The product is pure at the beginning, and does not require successive crystallizations as when made from iron.

The preparation of bromide of ammonium by means of bromine dropped into a diluted solution of ammonia causes a lively reac-

tion with disengagement of heat, which, added to the production of nitrogen, occasions a loss. But if the operation is performed in a Woulf's apparatus, of earthenware, with an excess of ammonia, the loss of bromine vapor is entirely avoided. The evaporation of the liquors is effected in a cast-iron retort arranged with an earthenware recipient to collect the excess of ammonia. The decomposition of the bromide by carbonate of soda may also be executed on a large scale in cast-iron vessels. —*Journ. de Pharm., Sept., 1870.*

Preparation of Caustic Soda from Sodium. The great reduction in price of sodium enables it to be used for obtaining pure caustic soda, which, thus made, is now an article of commerce. The process is as follows: Into a deep, hemispherical, silver vessel, capable of holding 20 litres (5½ gallons) introduce a drop of distilled water, and then lay above it a morsel of sodium, about a square centimetre. The silver vessel, which should dip in cool water to prevent an explosion, is then shaken so as to produce contact between the water and sodium, which is transformed to a milky liquid. To this is added, with constant stirring, other fragments of sodium and drops of water until three or four pounds of sodium have been converted into a thick milky liquid. This is deprived of the water it contains by exposure on a gas furnace at a red heat and cast into moulds. —*Journ. de Pharm., Sept., 1870.*

On the influence of Sugar on Magnesia used as an Antidote. In 1846, M. Bussy, and afterwards Christison and others, recommended magnesia as an antidote for arsenic and other metallic poisons. M. Carles, supposing that sugar (as in the case of lime) would, by rendering magnesia soluble, increase its efficacy, tried the mixture of sugar, water and magnesia, but, to his surprise, found that it rendered the arsenite of magnesia soluble, and that sugar tends to prevent the formation of arsenite of magnesia, and is, therefore, useless and pernicious. When, however, saccharated magnesia is used with the salts of lead, copper, antimony and mercury it hastens and facilitates their decomposition without uniting with them, and in some instances the sugar of itself acts by reducing the oxides. For this last reason it may be better to use honey in lieu of sugar.

In conclusion, *except in the case of arsenic*, the association of sugar with magnesia augments the efficacy of the base employed as a general antidote. Two and a half drachms of magnesia, five or six drachms of sugar and three fluid-ounces of water (boiling) appear to be the most convenient proportion.—*Repertoire de Pharmacie*, Aout 1870.

On a new reagent for Alkalies. M. Boettger informs us that the fresh leaves of *Coleus Verschoffelti*, an ornamental plant, are put in a glass bottle and covered with absolute alcohol, containing some drops of sulphuric acid, and macerated twenty-four hours, when the fluid is decanted and other leaves introduced into the same vessel after the exhausted leaves are removed and the liquid returned. The tincture thus obtained is filtered, and is charged with the coloring matter of the leaves, into which strips of paper are introduced and dried in the air.

The test paper thus obtained has a magnificent red color which passes more or less to a fine shade of green by the action of alkalies and alkaline earths. The author considers it better than reddened litmus because more sensitive, and is not modified by carbonic acid, and should be kept close.—*Journ. de Pharm.*, Sept., 1870.

Disinfecting Solution of Carbolic Acid. The Paris authorities, according to the *Journ. de Pharmacie* for August, have furnished gratuitously to poor families, where fatal cases of small pox have occurred, a solution of one part of carbolic acid in 100 parts of water, to bathe the corpse, to prevent infection.

To Camphorate Blisters. M. Deschamps d'Avallon has suggested, when it is desirable to camphorate a blister, it may be readily accomplished by dropping on its surface a few drops of a saturated solution of camphor in chloroform, made by adding two parts of the latter to four of the former.—*Journ. de Pharm.*, Aout, 1870.

New source of Citric Acid. Prof. O. Silvestri, of the University of Catania, has recently observed that the fruit of *Cyphomandra betacca*, one of the Solanææ, growing in the gardens of Sicily, contains a great quantity of citric acid. It is originally from Mexico, and is found in Peru and other parts of South

America, and is called the *tomato of la paz*. This plant is ligneous, attains the height of twelve feet and its fruit yield from one to fifteen per cent. of citric acid. The common tomato also contains citric acid.—*Cosmos, in Journ. de Chim. Méd.*

Honey of Rhatany Root. Treat 300 parts of rhatany with 1000 parts of boiling water to obtain a decoction, strain, add 800 parts of white honey and concentrate until the whole weighs 1200 parts. It is employed as a gargle, 3 parts to make 20 parts of a stringent gargle.—*Rep. de Pharm. and Revue Pharmacutique.*

Process for Purifying Oils for Manufacturing. The process of M. Keyer, which is applicable to all oils, has given excellent results in a manufactory of rape seed oil. Into 100 kilo-grammes of oil put a mixture of 600 grammes of solution of ammonia and 600 grammes of water, and agitate the barrel well until the alkali is perfectly mixed, which may be done in fifteen minutes. The barrel is then sealed hermetically, and, after three days repose, the oil is decanted and filtered. The residue is used for the manufacture of soap.

Oil thus worked contains no trace of acid, and the mucilaginous impurities are destroyed or precipitated.—*Journ. de Chimie Méd., Aout, 1870.*

Accident in Distilling Ether. In the *Journal de Pharmacie*, for July, M. Regnauld notices the following accident, whereby M. Adrien nearly lost his life. M. Adrian was working in his laboratory, at Courbevoie, when his preparator quitted, for a few minutes, an alembic where he was distilling ether by steam heat. Some moments after he had left M. Adrian observed that the flow of ether was too rapid, and approached the still to moderate the force of steam. He held his hand on the key of the stop-cock, when, all at once, in the middle of the laboratory, he saw a flame, which directed itself towards the condensing vessel. The ether took fire and broke the vessel, the contents burst over the still, which boiled over and threw some boiling inflammo-ether over M. Adrian. During the conflagration which ensued he tried to open a door situated near the apparatus but failed, and was constrained to traverse the flames which hemmed him in to reach an open door beyond. During this perilous act his clothing

ignited, but his presence of mind served him to jump into a tub of water, which probably saved him from death. After a period of great suffering, during which his friends feared grave cerebral complications, he had recovered sufficiently to be out of danger, and to explain the foregoing account of the accident. M. Regnaud asks how an accident of this nature could occur in the laboratory of so prudent and skillful an operator as M. Adrian, so thoroughly acquainted with the properties and dangers of ether? There was no lamp in the laboratory, and the heat was applied by steam. [Probably the accident occurred by the current of ether vapor from neglected refrigeration traversing the floor of the room through the open door to some source of ignition, and then retraced its path to the still. The density of ether vapor will admit of this theory, and the open door would naturally be the direction of the current in a heated room.]

Condurango. The *Repertoire de Pharmacie*, for August, describes this as a contorted, ligneous substance, derived, probably, from a convolvulaceous plant contorted like the *bind weed*. The cortical part is grey externally and yellowish white internally. It has a weak aromatic odor and bitter taste. The wood appears to be constituted of long white fibres; its odor and taste are less decided than the bark. It is said that the seeds of this bind weed are poisonous and simulate the tetanic poisons.

The medical authorities of Equador assert that condurango has rendered them real service, when administered internally by decoction, in cancerous and syphilitic ulcers. This is rendered more probable as the government of Equador has sent a quantity of this drug to be experimented on by French physicians.

Syrup of Iodide of Potassium and Iron (of Lahache).

Take of Iodide of Potassium . . .	308 grains.
Iodide of Iron (in solution 1 to 3) . .	230 "
Orange Flower Water . . .	462 "
Simple Syrup (concentrated) . . .	33½ fluidounces.

Dissolve the iodide of potassium in the orange flower water, add the other solution and incorporate the syrup. Preserve it cool and free from light.—*Union Pharmaceutique*.

GLEANINGS FROM GERMAN JOURNALS.

By J. M. MAISON.

Sunstroke.—The *Fremdenblatt* contains a correspondence from a traveller who, on March 23, 1866, was near the Dead Sea with a party of eighteen, one of whom fell from his horse overcome by the excessive heat of 42° R. (126.5° F.) One of the Bedouin guides bathed his hands, head and face with lemon juice, after which the sufferer was able to ride two hours to the banks of the Jordan, where he could rest for several hours, and then completely recovered.—*Ph. Centr. Halle*, 1870, 299.

Resin of Tampico Jalap. *—Prof. H. Spirgatis found it to have properties similar to convolvulin, the resin of true jalap, except that it is readily soluble in ether. This *tampicin*, $C_{34}H_{54}O_{14}$ † under the influence of caustic alkalis is converted into *tampicic acid*, $C_{34}H_{60}O_{17}$ †. Dilute mineral acids convert it into sugar and *tampicolic acid* $C_{16}H_{32}O_3$ †. Tampicin fuses at about 130° C; but even at 100° C (212° F.) it is decomposed, assuming a yellow and finally brown color. It acts similar to convolvulin, but rather uncertain. Moreover, the small amount of resin contained in the tubers, and the large amount of alcohol requisite for its extraction, render it higher in price than convolvulin.—*Buchner's N. Repert.*, 1870, 452—459.

Prize query.—It is very probable that the albuminous bodies of the animal organism, the so-called protein compounds, are to be regarded merely as modifications of the albuminous compounds generated in the vegetable organism. The faculty of the University of Munich desires a compilation of the methods of preparation and of the properties of the animal and vegetable protein compounds (albumen, casein, fibrin,) and a critical sifting and extension of our present knowledge, based upon new researches.

Essays to be handed in on or before April 30, 1871.—*Buchner's N. Rep.*, 1871, No. 8.

* Daniel Hanbury refers the origin of Tampico Jalap to a new species, which he names *Ipomoea simulans*. *Journ. Linn. Soc.* vol ix.

† C=12; O=16.

SOLUBILITY OF GLUE IN GLYCERIN.

BY JOHN M. MAISCH.

Read before the Philadelphia College of Pharmacy, Sept. 18, 1870.

Having recently been called upon as expert to testify in a suit involving the right to manufacture a composition for printing rollers in which sugar is wholly or partially substituted by glycerin, a question propounded to me has led me to make some experiments, which appear to possess some interest to pharmacists and to point to a valuable improvement applicable for technical analysis. The facts of the case, leaving the legal technicalities out of the question, are as follows: A patent was granted in England, on Nov. 24, 1854, to Thomas De la Rue, for a composition of printing rollers, &c., consisting of glue and glycerin. In this patent the glue is *made* by macerating so-called glue pieces, that is, cuttings of hides, skins, &c., in water for several days, after which they are dissolved in glycerin with the aid of heat. This process may be shortened by substituting glue for the glue pieces, and dissolving it in the glycerin. Subsequently a patent was taken out in the United States for similar purposes, the material used being glue, glycerin and sugar. A firm of this city having for some time manufactured such a mixture, a suit was instituted by the patentees in this country to restrain the Philadelphia firm from continuing the manufacture of material for printing rollers with glycerin as an ingredient.

It is well known that glue, and gelatin in general, swells up considerably when kept in cold water; it absorbs water and loses its transparency, and then dissolves very readily in hot water, while the solution is effected slowly if the glue is at once boiled with water without previous maceration, or soaking as it is technically termed. This behavior is so well understood that, even in the kitchen, the gelatin is allowed to soften in cold water before it is boiled to form a jelly.

It is also well known that glycerin is an excellent solvent, capable to dissolve perhaps all compounds which are soluble in water, or in water and alcohol, and many which are soluble in alcohol but not or merely sparingly in water. If this is borne in mind, there is, even at first sight, nothing improbable or un-

reasonable in De la Rue's process, and the writer testified to this effect when questioned on the subject, without having had the time to prove the correctness of his inferences by direct experiment. He also unhesitatingly answered in the affirmative when the question was asked whether he considered glue to be soluble in glycerin; the fact that gum arabic, tragacanth, starch, &c., have in glycerin a behavior very similar to that in water, as far as their solubility is concerned, naturally led to the belief that gelatine would not be an exception. He was therefore greatly surprised when one of the attorneys engaged in the above suit privately informed him that experiments had been made proving that glue was totally insoluble in glycerin, which would even abstract from glue the moisture naturally contained in it. The writer does not know who made the experiments referred to by the legal gentleman, but whoever may have performed them has done so most superficially, entitling his entire results to no credit whatever, unless verified by other more critical experimentists.

Upon the table will be found a number of specimens, the results of my experiments, which I am about to describe, and the reactions of which I shall exhibit to the meeting. The specimens are: (1) white glue macerated with glycerin at a temperature never exceeding 75° F.; (2) white glue digested with glycerin in a waterbath for half an hour, then macerated at ordinary temperature for several days, and afterwards again heated in the waterbath; (3) white glue digested with glycerin for 3½ hours at a temperature of 160° F.; (4) common brown glue treated the same way; (5) white glue soaked in cold water for 12 hours and, after draining the water, heated with glycerin to 200° F.; (6) common brown glue treated the same way; (7) common brown glue soaked in cold water for 3 minutes, then with the superficially adhering moisture allowed to stand for 12 hours, and subsequently heated with glycerin like the former.

The materials used in these experiments were as follows: The glycerin was made by Wm. J. M. Gordon, of Cincinnati, free from inorganic impurities, without odor, and had a specific gravity of 1.24; the white glue was thin, hard, fractured readily,

and retained its hardness in damp weather; the brown glue was 4 to 5 times thicker than the former, and slightly flexible.

After No. 1 had been standing for 24 hours without examination the glue was found to be still firm; it could readily be broken into smaller pieces, but the sharp edges observable before were now softer and the surface of the glue, after removing the adhering glycerin by bibulous paper, was soft and readily scraped off. It became very evident that cold glycerin, undoubtedly owing to its tenacity, permeates glue very slowly. The glycerin, however, had dissolved a notable quantity of gelatine, which was readily proven by the flocculent precipitate produced by a solution of tannic acid.

When No. 2 had been digested in boiling water for 15 minutes, the glycerin likewise yielded a precipitate with tannin, but digestion for half an hour failed to unite the two substances completely. During the subsequent maceration for about a week the glue continued very slowly to swell, and by the final digestion for one hour it united with the glycerin, forming on cooling a firm jelly. No. 3 was occasionally stirred, and finally yielded an elastic, rather soft jelly. No. 4 under the same circumstances became almost gelatinous, the mass flowing about the same as thick Venice turpentine. No. 5 was completely dissolved after digestion for 15 minutes, the solution gelatinizing on cooling. Nos. 6 and 7 behaved exactly like the former, only requiring a little more time, namely, 5 and 12 minutes more.

For use in the arts, such as the manufacture of printers' rollers, the commoner qualities of glycerin are used, on account of their low price and because the small quantity of odorous principles and of inorganic constituents are without influence on the final result. These commoner qualities of glycerin are usually of less specific gravity than the Pharmacopœia requires. The glycerin used in the experiments just related was, therefore, better than the qualities likely to be employed, though, perhaps, of about the same specific gravity as the densest of the commoner qualities. Only two experiments were made with a glycerin fully up in every respect to the requirements of the U. S. Pharmacopœia. Experiment No. 8 was as follows: White glue of the same lot as before was digested for ten minutes at 200° F., with

Bower's inodorous glycerin, spec. gr. 1.25; the glue had been softened on the surface, the pieces had become adhesive, and the liquid contained notable quantities of gelatine in solution, readily proven by the flocculent precipitate occurring with solution of tannin, the results being exactly the same as in the first portion of experiment No. 2.

White glue was now soaked in water until it had become soft, the water was drained off and Bower's inodorous glycerin added (No. 9). Thus far no change has been produced in the appearance of the glue.

The results of these experiments may be summed up as follows:

1. Glue is soluble at the ordinary temperature in a large proportion of glycerin.
2. Glue is permeable by glycerin, slowly at ordinary, more readily at an elevated temperature.
3. Glue swelled in consequence of the absorption of water, remains unchanged in appearance under glycerin, that is to say, even if the glycerin should abstract the water, the former will take the place of the latter liquid, thus preventing the shrinking of the glue.
4. Glue, by continued digestion, dissolves completely in glycerin, gelatinizing on cooling.
5. The solution of glue in glycerin is accelerated by previous maceration in glycerin, and by increasing the temperature (doubtless also by increasing the pressure).
6. Glue thoroughly permeated by water dissolves in hot glycerin about as readily as it does in hot water.

It appears to me that the behavior of gelatin and glycerin to unite to a jelly of any desirable consistence might probably be made use of in medicine as a vehicle for medicines of an unpleasant taste. The antiseptic properties of glycerin would, doubtless, render such a jelly perfectly unchangeable, while its non-drying qualities would retain to the jelly its soft consistence. Of course there is no difficulty in imparting to such a preparation any desirable flavor.

In analysis gelatin is used to estimate the quantity of tannin contained in astringent vegetables, many of which are used for

tanning. There has always been a difficulty connected with such operations, due to the changes which gelatin undergoes so very readily when in aqueous solution, thus rendering the making of a new solution and its titration necessary. The complete solubility of gelatin, in even concentrated glycerin and the well known antiseptic quality of the latter, render it very probable that a solution of the former, in even dilute glycerin, may be kept unaltered for some time, in which case much time would be saved in such establishments where the assaying of tanning material has to be frequently performed. I hope to be able to extend my experiments in this direction and to report thereon at some future time.

CAMPHOR LINIMENT AN ANTIDOTE TO THE IRRITATION
OF COWHAGE.

• BY J. WEICHSELBAUM.

Editor Am. Journal Pharmacy :

SIR—In cleaning our store yesterday, one of our men came across, a can not labelled. Not knowing what it was, he took some out with his hand to examine it; the same time he called one of the boys, and asked him if he knew what it was; not knowing, he also took some in his hand. A short time afterwards, they both came to me, bringing the can with them, and told me all about how they got it on them. They said it itched terribly, and wanted me to apply something. The can contained *cowhage*. They tried to wash it off with soap and water before they came to me. I applied some olive oil, and several other oils, which relieved them not the least. A bottle of *Camphor Liniment* being near at hand, I tried some of that, which relieved the itching sensation at once. Seeing that it relieved the itching so quickly, I put some *cowhage* on my hand; after the itching commenced, I applied some of the *Camphor Liniment*, which relieved me in an instant.

Savannah, Ga., Oct. 22d, 1870.

DETECTION OF ADULTERATIONS IN COPAIVA BALSAM.

BY DR. H. HAGER.

The author has met with copaiva balsam adulterated with oil of sassafras. The adulteration is detected in the following manner: 1 c.c. balsam and 2 c.c. concentrated sulphuric acid are mixed; after the mixture has cooled, 20 c.c. alcohol are added, the mixture is heated to boiling, and then set aside. If the balsam be pure, after the addition of the alcohol, a milky grey yellowish or pale reddish yellow liquid is obtained, which on boiling, becomes yellow, clear and transparent, a resinous compound settling to the bottom. If adulterated with oil of sassafras, the addition of alcohol produces a dark brown-red color, becoming after boiling much darker, with a tint of violet, similar to the juice of black cherries.

Oil of turpentine, which is probably rarely used as an adulterant, is readily detected by heating slightly two to four drops of the balsam, dropped upon bibulous paper, in such a manner that no visible vapors are evolved. Oil of turpentine evaporates first and is recognized by its odor.

This test is unreliable if Venice turpentine is used for adulteration. The author invites experiments with the following test, which has given him reliable results: 5 or 6 drops of water and 5 to 7 c.c. balsam are mixed in an evaporating dish with sufficient levigated litharge to form a thick semi-liquid mass. At a temperature of 20 to 25° C. (68 to 77° F.) a well marked turpentine odor is given off, if the balsam contains but 10 per cent. Venice turpentine, and even 5 per cent. may be still recognized.

An approximate quantitative estimation of the adulterant may be made as follows: 5 grm. balsam, 8 to 10 drops water, and 15 grm. litharge are heated for a quarter hour in a sand-bath, then for several hours in a water-bath. After cooling, the hard mass is rubbed to powder and boiled with benzin, the liquid evaporated and the residue macerated with 90 per cent. alcohol for several hours. The alcoholic filtrate evaporated to dryness, leaves about 0.2 to 0.3 resin, which, when boiled with solution of potassa, yields a filtrate which is not or scarcely tinged by sulphide

of ammonium. In the presence of turpentine, however, this last residue contains about three-fourths of the resin of the adulteration, and yields with potassa a liquid, in which sulphide of ammonium produces a bulky brown-black precipitate. The lead compound of the resin of turpentine is soluble in benzin and alcohol, but not the corresponding compound with the resin of copaiva.—*Ph. Cent. Halle*, 1870, 296, 297. M.

ON THE OXIDATION OF BRUCIA.

BY SCHGENN, OF STETTIN.

Brucia is still sometimes employed as a test for nitric and nitrous acids. The red color passing into yellow, produced by a solution of brucia in concentrated sulphuric acid with nitric or nitrous acid, is not the result of the formation of a nitro compound, but the result of oxidation, and may likewise be obtained by chlorine water, peroxide of hydrogen, very dilute chlorate of potassa, very dilute chromic acid or chromate of potassa, dilute hypochlorite of soda, ferricyanide of potassium, bichloride of platinum, &c. If a drop of cupric chloride is added upon a few drops of solution of brucia, a rose-color is produced near the yellow margin resulting from the influence of the sulphuric acid.

The reaction is observed with auric and ferric chlorides only by not exceeding certain definite proportions. That the color is in reality a product of oxidation is more evident by the decoloration produced by protochloride of tin with some muriatic acid.—*Ph. Cent. Halle*, 1870, 283, 284, from *Fresenius Zeitschr. f. anal. Chem.* M.

DETECTION OF CARBOLIC ACID IN OIL OF CLOVES.

Hager (*Ph. Centr. Halle*, 1870, 281) agitates the suspected oil with six to ten times its volume of benzin; pure oil of cloves yields a clear solution; carbolie acid, if present, renders the mixture turbid and separates. Equal volumes, however, of carbolie acid, oil of cloves and benzin, yields a clear mixture.

Carbolie acid may likewise be removed from oil of cloves by

agitating it with dilute glycerin ; but the separation takes place slowly, rendering repeated agitation and boiling with glycerin necessary.

Flückiger (Schweiz. Wochenschr. f. Ph., 1870, No. 26) suggests to agitate from 2 to 10 grammes of the oil with 50 to 100 times its quantity of hot water ; after cooling, the latter is poured off and concentrated by slow evaporation at a low temperature. To a few cubic centimetres of the aqueous solution, a drop of ammonia is added, and a small quantity of good chlorinated lime sprinkled upon it ; if phenol has been present, the liquid, after some agitation, will assume a green color, passing into blue, which is permanent for some days. Pure oil of cloves does not show this behaviour.

Phenol dissolved in 100 parts of water strikes a beautiful violet color with ferric chloride ; in the presence of oil of cloves, the reaction either does not take place, or not sufficiently distinct.

M.

NEWFOUNDLAND COD-LIVER OIL.

The process of manufacturing the far-famed cod-liver oil at Portugal Cove, Newfoundland, is described in the *St. John's Telegraph*. The livers of the cod are sold by the fishermen to the manufacturer of the oil at the rate of 24c. a gallon. On the average it requires $2\frac{1}{2}$ gallons of liver to produce a gallon of oil. The livers are first carefully washed, and must be "cooked" at once, while fresh. They are first put into a large tin boiler. This is plunged into a larger iron boiler filled with hot water, the water not being allowed to touch the livers, which are thus gently steamed till a quantity of oil is floating on the surface. This is dipped out and filtered through blanketing first ; then twice afterwards it is filtered through bags of moleskin. From the last filtration it comes out of a beautiful crystalline transparency, and without any unpleasant smell or taste. The oil is now poured into 60 gallon casks, and forwarded to the exporting merchant. The refuse is placed under screw presses and the remainder of the oil extracted. This is not refined, but sold as common cod oil, and is used largely on railways and for lubricat-

ing machinery. The cod-liver oil has gone up in price lately, owing to the immense demand for it in Europe, and now it is sold to the merchant at the rate of 130 cents a gallon. Last year 330 tuns of it were exported, the value being 260 dols. per tun. Of the common cod oil, unrefined, 4,521 tuns were exported, the value being 144 dols. per tun. So plentiful has been the catch of cod this year that in one factory 2,000 had been barrelled before the season was half through. The men who handle it get quite a liking for the oil. A little dog running about the premises laps it eagerly. The secret of making good cod-liver oil lies in the application of the proper degree of heat—too much or too little will seriously injure the quality. Great attention to cleanliness is also necessary, the filtering bags requiring to be washed thoroughly every day, and the troughs scrubbed out with great care. The rancid oil that is frequently met with is the produce of manufacturers who are careless about these matters. The best oil is made in the way above described; and all the pretences of quacks about refining it, and making it palatable, are, it is declared, mere moonshine, and either covers for adulteration, or such as deprive the oil of its medicinal properties. There is, no doubt, an enormous amount of adulteration practised by the retailers of cod-liver oil, but it is maintained that it is not done in Newfoundland. The greater part of the oil goes to London, and there it is “doctored.” The writer in the St. John’s paper states that were a person with competent skill and capital to embark in the manufacture in Newfoundland on an extensive scale, and bottle the oil on the spot for the retailers, guarding it by a label and other securities, and guaranteeing a pure article of the best quality, his oil would speedily take the the lead in the market.—*The Canadian Pharm. Journ.*, Toronto, Ont., Oct., 1870, from *Chem. and Drug*.

GENERATION OF HEAT BY FUNGI.

Dutrochet has observed that there is more heat generated by *Boletus æneus* than by any other vegetable, with the exception of *Arum*. This phenomenon is, however, by no means confined to *B. æneus*, but is, I believe, common to all *Boleti*; and when de-

composition has set in, the heat evolved is considerable, but even when perfectly young and fresh all the Boleti give out heat. Whilst packing up the three large and beautiful specimens of *B. colopus*, Fr., exhibited by me at the last meeting of the Royal Horticultural Society, I noticed the decided heat evolved from the specimens. At the time of packing, my plants were perfectly fresh and young, and after being placed in a light paper box for a short time, the heat evolved was apparent to the hand. I tested the heat with a thermometer, which stood outside the box in a shaded room at 70° , this after being placed in the box with the Boleti for half an hour rose to 75° . This fine species, though I believe rather rare elsewhere, is common in early autumn in Epping Forest, where it grows in company with another beautiful species, *B. pachypus*, Fr. Both attain here very large dimensions, and the former is extremely beautiful; the tubes are at first brilliant yellow, then orange; the stem deep carmine with a rich maroon base; flesh immediately changing to bright blue when cut or broken.—*Lond. Pharm. Journ.*, Sept. 3, 1870, from W. G. Smith in *Gardners' Chronicle*.

SIMPLE METHOD FOR PURIFYING METALLIC ARSENIC.

In order to restore to this metal its bright aspect, and also for the removal of any slight coat of suboxide which may adhere to it, the author advises that the metallic arsenic should be boiled for a few minutes in a moderately strong solution of bichromate of potassa, slightly acidified with sulphuric acid. The metal is next first washed with water, and then with alcohol or ether, and lastly placed in a small tube closed at one end, and sealed immediately after the arsenic has been put into it. Phosphorus, which has been kept a long time under water, and has become thereby coated with a whitish yellow crust, may be treated in the same way, when it becomes quite colorless again. The phosphorus should be, of course, carefully treated, so as to prevent its ignition; and, after having been well washed with cold water, should be preserved in water freed from air by having been previously boiled for a long time and cooled in a well-closed vessel. *Lond. Chem. News*, Sept. 30, 1870.

NEW PROCESS FOR THE QUANTITATIVE ESTIMATION OF THE ALKALOIDS OF THE CINCHONA AND CALISAYA BARK.

BY P. CARLES.

The author begins with giving a review of the different methods hitherto in use for the quantitative estimation of the alkaloids alluded to, which methods may be divided into two main classes—viz., those by which the whole of the alkaloids are estimated together, and those by which only the quinine is estimated. The author's new method is the following: A fair average sample of the bark to be tested is ground up to a fine powder, and sifted, but any residue left on the sieve is to be pulverized again. 20 grms. of this powder are taken and intimately mixed, in a mortar, with 8 grms. of quick-lime, slaked, just previous to use, with 35 grms. of water. The pasty mass thus obtained is dried on a water-bath. As soon as the mixture has become dry enough to be broken up into small lumps, this is done, and the lumps placed in a funnel-shaped tube, the lower and narrower opening of which is closed by a plug of cotton wool. Chloroform is poured over the mass, a quantity of 150 grms. being sufficient, and the last traces of that fluid are washed off with some distilled water; the larger portion of the chloroform is either evaporated or (as may suit the operator) distilled off on a water-bath, and the residue taken up with from 10 to 12 c.c. of dilute sulphuric acid (1 of acid to 10 of water). This solution is poured on to a previously well-moistened filter, which retains the resinous matters, while a clear liquid runs off. The filtrate is boiled, and when in full ebullition, ammonia is added to it, so as to leave only a slightly acid reaction; all the sulphate of quinine crystallises out, while the mother-liquor retains the rest of the alkaloids, which may be separated by precipitation and further tested. The author has added to his paper some tabulated results of experiments made by him with the same quantity of bark, and operating with various methods executed carefully, as described by the original authors and suggestors of these methods, in order thus to prove the superiority of his method.—*Lond. Chem. News*, Sept. 2, 1870.

ESTIMATION OF GLUCOSE IN COMMERCIAL SUGARS.

By J. MIDY.

The author prepares a Fehling test-liquor of such a strength that 100 c.c. thereof are completely decomposed by 1.05 grms. of uncrystallizable sugar (1 c.c. of the liquor agrees, therefore, with 0.0105 of glucose); a solution is also made of 20 grms. of the sugar to be tested in 150 c.c. of distilled water. To this solution, previously heated till near its boiling-point, is added, by means of a Mohr's burette (divided into 1.10th c.c.), $\frac{1}{2}$ c.c. of the Fehling cupreous liquor; the sugar solution is withdrawn from the source of heat, and, after having been stirred up, the suboxide of copper, if any has been formed, is allowed to settle. When this has taken place, a very small portion of the liquid is filtered through Swedish filtering paper, and to the filtrate is added a drop of a concentrated solution of ferrocyanide of potassium and acetic acid. If too much of the cupreous test-liquor has been added, the addition of the reagents alluded to will have the effect of causing the formation of the well-known precipitate of ferrocyanide of copper; and, in that case, a fresh sugar solution has to be made, and only $\frac{1}{4}$ c.c. of the cupreous test-liquor has to be added; and the ferrocyanide should not give indications of excess of copper in the filtered liquid as above alluded to. Such being the case, the operator knows that 20 grms. of sugar contain less than 0.0052, and more than 0.0026, of glucose; taking the average of these figures, which is 0.0039, and multiplying by 5, we learn that the sample of sugar tested contains about 0.0195 per cent. of glucose.—*Lond. Chem. News* Sept. 2, 1870, from *Revue Hebdomadaire de Chimie*, July 28, 1870.

HYDRATE OF BROMAL.

There is a valuable article by Dr. E. Steinauer, of Berlin, in the last volume of "Virchow's Archiv," on the action of the hydrate of bromal on animals and on man. The experiments were made in the Berlin Pathological Institute, and were under the immediate observation of Liebreich himself. The hydrate of

bromal, according to the observations detailed, when administered to animals, undergoes a similar change to that undergone by chloral, being converted by the alkalies of the blood into bromoform. But this change goes on slowly, for at the end of an hour and-a-half there was found in the blood, in addition to bromoform, still some undecomposed bromal. The substance is further oxidized and evacuated in the urine as bromide. The symptoms produced by bromal on animals (frogs, rabbits, guinea-pigs,) were first a stage of restlessness, followed by imperfect sleep and anæsthesia, and finally dyspnœa and death with or without convulsions. After large doses, both in frogs and rabbits, the heart was found after death relaxed and distended,—whereas, after smaller doses, it was contracted. In the former case there is probably direct paralysis of the heart by the bromoform, such as occurs after large doses of chloroform. The preliminary stage of restlessness, which has no equivalent after administration of chloral, is ascribed to the action of the bromal aldehyde itself, the decomposition occurring, as stated above, more slowly than is the case with chloral. The author observed a stage of restlessness, after a hypnotic dose of chloral, in a patient suffering under gout, and he ascribed this to the acid state of the blood preventing the usual decomposition into chloroform. With this view he administered alkalies to the patient, and after a few days the same dose of chloral produced the usual hypnotic effect. Proceeding from this, he applied the same principle in his experiments with bromal. Having injected carbonate of soda subcutaneously in rabbits, he then injected the hydrate of bromal, and found that the stage of restlessness was entirely absent. The author has administered bromal to man in only a few cases. He has found good effects from it in epilepsy, and in soothing the pains of *tabes dorsalis*. The method of administration which he has ultimately employed is, first, in the morning and at mid-day a powder containing about 14 grains *sodæ bicarb.*; then in the evening two to four pills, containing each from $\frac{1}{2}$ to $1\frac{1}{2}$ grain of bromal.—*Medical Press and Circular*, Dublin, Aug. 24.

ON THE CONGELATION OF BISULPHIDE OF CARBON.

By N. V. WARTHA.

The congelation of bisulphide of carbon, which, according to the treatises on chemistry, requires a temperature of -90° for its solidification, may be easily effected by directing a very rapid current of dry air upon the surface of the pure liquid (purified by an amalgam of silver) contained in a glass vessel.

If a thermometer be plunged into the bisulphide of carbon during this operation, a snowy crust will be noticed covering the sides of the vessel and the thermometer, even before the temperature has become 0° . The temperature then rapidly descends to -18° and a white mammillated mass rises to the surface, and sometimes even stops up the tube for conducting the air. Soon all the liquid disappears and the thermometer commences to rise again up to -12° , where it remains stationary as long as the bisulphide of carbon is solid. In this state it presents the same phenomena as solid carbonic acid.

The bisulphide of carbon will remain solid for some time, and in this state it possesses a peculiar aromatic odor. Its formation may be utilized for the production of ice, thus: add to some water contained in a capsule, a few cubic centimetres of bisulphide of carbon, and bring a rapid current of air to play upon it. The water will soon solidify, just as the bisulphide of carbon itself, provided the latter is present in sufficient quantity, the temperature may then reach -15° .

Bisulphide of carbon cannot be solidified in vacuo, except it be mixed with ether.

The temperature above cited are in degrees centigrade.—*Deutsche Chemische Gesellschaft*, 1870, No. 2, in *The American Chemist*, Oct., 1870.

INEFFICACY OF YOUNG CANTHARIDES.

According to J. Neutwich, the young immature cantharis insect does not possess the blistering property; it is only the adult flies, capable of the act of reproduction, which contain cantharidin.—*Zeit. fur Chem. and Rép. de Pharm.*

OPHELIA CHIRAYTA.

BY FLÜCKIGER AND HOHN.

This plant is little known in Europe, and is not much used even in England, although it has a place in the British Pharmacopœia of 1867, as well as in that of the United States of 1866. But in India Chirayta has long been in high repute, and is generally sold in the bazaars. It is also mentioned among the large numbers of medicinal agents comprised in the "Systema Medicinæ" of Susrutas, about ten centuries before our era. The Sanskrit name is *Kiratatikta*, or the bitter herb of the Kiratas, a half-caste race that had been driven back into the hill country of northern India. It is with good reason, therefore, that this plant has always received attention from English physicians in India, and that it has been included in the Indian Pharmacopœia of 1868.

Strangely enough, Guibourt attempted to refer to *Chirayta* several of the older descriptions and drawings of the *Calamus aromaticus*, *odoratus*, or *verus* that was brought at an early period from India to Europe. It is true he pointed out the total absence of aroma, so that the remarks of Fée and Royle sufficed to prove the total difference between the odorless *Chirayta* and *Calamus*, although the history of the latter is not yet fully ascertained.

This plant, from which this bitter herb is derived—*Ophelia** *chirata*, Griseb.—was first drawn by Roxburgh in 1814, under the name *Gentiana Chirayta*; subsequently also by Wallich, by Don (as *Agathotes Chirayta*), by Wight and Cleghorn. It is an elegant annual *Gentiana* of the lower Himalaya, occurring from Simla, and through Kumasu, as far as Nepaul. In its outward appearance *Ophelia Chirayta* closely resembles our *Erythræa Centaurium*, though with several differences.

The Chirayta commonly met with in English commerce is usually of very inferior character, and chiefly consists of stalks deprived of their leaves. The plant that has been examined by Höhn, consisted, on the contrary, of well-preserved speci-

* Derived from *चिराय*, useful, in reference to the medicinal virtue of the plant.

mens retaining flowers, fruit, and roots, so that the essential characteristics of that nature could be well observed. For the supply of this material I am indebted to the kindness of my friend Daniel Hanbury.

The woody stems were from 2 to 3 feet long, and $\frac{1}{2}$ inch thick at the lower ends, cylindrical, with knots at distances of $1\frac{1}{2}$ to 3 or 4 inches, at the upper ends obtusely quadrangular, with wings extending downwards. The colors varied from brownish-yellow to dark purple-red. The branches were more greenish or greyish-brown. The root is sometimes from 2 to 4 feet long, and twice as thick as the stem. It forms generally a simple tap-root, furnished with somewhat scanty fibres. Larger specimens present an angular bending of the root, probably indicating a growth of more than one year. Generally the stem rises isolated from the root, but in some instances I met with plants consisting of several stems. The numerous prolonged branches resemble in their arrangement those of *Erythræa Centaurium*, and towards the upper part they form a thick whorl. The insertion of the leaves and flowers may also be compared to that of the indigenous Gentian referred to above. The lower leaves of *Ophelia* are often 3 cm. in length and 7 mm. broad; the upper ones are very much smaller. All of them are acutely lancet-shaped, smooth-edged, cordate at the base, and, like the entire plant, perfectly glabrous. According to the size of the leaves, they present 3, 5, or 7 ribs, of which the central one is the thickest.

The yellow, 4-parted corolla is about 12 mm. long, and rather glandular at the base. The calyx is much shorter than the corona. The fruit is a 1-celled capsule, with two valves at the apex.

The flower possesses the same intense bitter taste that is characteristic of Chirayta. It is only the woody substance of the thickest stems that is not bitter; this contains a considerable pith. Even the branches present in sections a broad ring.

The popular name of this drug in India is *Creyat*, and it has been applied to several varieties of *Ophelia*; but it seems that *Andrographis paniculata*, Wallich (*Justicia paniculata*, Burm.), an *Acanthacea*, frequent in Bengal, is principally understood

under that name (or, properly, *Kiratha*). This plant, which is only 1 or 2 feet high, also tastes intensely bitter, but it is distinguishable by its alternate, long-stemmed flowers, with rose-colored bilabiate corolla. Moreover, the flower forms a panicle.

While *Ophelia Chirayta* is distinguished as *dukhani*, or southern Chiretta or Creyat, the *Ophelia angustifolia*, Don, is, on the contrary, termed *pahari* Chiretta, as coming from the mountains. This variety grows in the same districts as the true Chirayta; but it has leaves that are almost lineal, and the flowers have a white corona, with violet spots, that is shorter than the calyx.

On the contrary, *Ophelia elegans*, Wight, is indigenous to the mountains of southern India, and in the bazaars of that district it is described as inland Creyat. It has blue flowers.

Lastly, the Indian Pharmacopœia mentions the white-flowered *O. densifolia*, Griseb. (*O. multiflora*, Dalzell). All these varieties are described as quite as bitter as the true Chirayta, and as being, in fact, used in the place of it throughout the north-western, central, and southern provinces of India.

These varieties of *Ophelia* correspond in their native country to the allied indigenous European plants which have been introduced into medical use here, and from that point of view their investigation by Höhn presents some pharmaceutical interest. In the Indian Pharmacopœia there is an infusion of Chirayta, and an aromatic tincture with cardamoms and orange-peel.

By extracting the stalks and roots with alcohol of 60 per cent. sugar, wax, chlorophyll, soft resin, tannin, an acid (ophelic), and a peculiar bitter substance (chiratin) were dissolved.

The acid was syrupy, and very deliquescent, yellowish-brown, tasting at first slightly sour, afterwards intensely bitter. When warmed it smells like lugian; it dissolves in water with some turbidity (due, perhaps, to resin), completely in alcohol, or a mixture of spirit with ether. It decomposes alkaline solution of copper when warmed with it; also ammoniacal solution of silver with alkalis it darkens; with perchloride of iron it becomes reddish-yellow; with sulphate of copper dirty green; with lead salts yellow, and forms amorphous compounds with acids. Analysis of the lead compound gave $C_{20}H_{20}O_{20}$ as the formula.

Chiratin is a pale yellow, very hygroscopic powder, at the utmost capable only of a granular crystallization; it is very bitter, sparingly soluble in cold water, rather more in hot water, readily soluble in alcohol or ether. It is neutral to test-paper, does not reduce alkaline solution of copper, and gives with tannic acid a copious white flocculent precipitate; formula $C_{32}H_{48}O_{30}$. By the action of acids chiratin is separated into ophelic acid and a yellowish-brown amorphous substance that is not sugar, but tastes bitter, is scarcely soluble in water, readily soluble in spirit, does not reduce copper solution. Höhn assigns to it the formula $C_{26}H_{24}O_6$, and the name Chiratogenin.

The herb itself gave the same results as the stem and roots.—*Pharm. Journ., Lond., Aug. 6, 1870.*

THE ADULTERATION OF SAFFRON.

By DANIEL HANBURY.

Saffron is, at the present time, the subject of a serious adulteration, to which I think it important to call attention, the more so as I find that its nature and extent are not fully known even to experienced druggists. Saffron adulterated in the manner I am about to describe, is, for the most part, *undistinguishable to the eye* from the drug in a state of purity, yet the means of discriminating between the genuine and the fraudulent are of the most simple character.

Let me remark at the outset that there is, in my opinion, no method of testing saffron more effectual than that of scattering a very small pinch on the surface of a glass of warm water. The stigma of the saffron-crocus immediately expands, and exhibits a form so characteristic, that it cannot be confounded with the florets of safflower, marigold or arnica, or with the stamens of crocus itself.

It was in performing this simple operation that I detected that some saffron which I had just purchased had been treated with a heavy earthy powder, which speedily separated from the lighter stigmata, and fell to the bottom of the glass. Upon collecting and examining this powder I found it to be *carbonate of lime*, which, by some ingenious process of which I am ignorant, had been

made to adhere to the thread-like saffron without in the least altering its general appearance.

To ascertain the amount of earthy matter thus fraudulently added, I subjected several specimens of saffron to incineration, each having in the first instance been dried in warm air until it ceased to lose weight. The results obtained in the examination of eight samples are indicated in the following table:

Examination of Saffron.

Sample.	Description.	Percentage of Ash.
No. 1	Origin unknown, . <i>pure</i> .	5.90
" 2	" " " "	4.48
" 3	Valencia, . . . " "	4.41
" 4	" " " "	5.20
" 5	Alicante, . <i>adulterated</i> .	21.22
" 6	" " " "	12.72
" 7	" " " "	28.01
" 8	" " " "	15.36

Sample No. 2, the quality remarkably fine. Sample No. 3, so-called *Valencia*, pure, but not of finest quality. Sample No. 7, adulteration perceptible to the eye, many of the stamens being crusted with an orange-colored earthy powder.

The method of testing a sample of saffron for earthy adulteration which I recommend is this:—Place in a watch-glass a very small quantity (say, 1 grain) of the saffron, and drop upon it 8 or 10 drops of water; lightly touch the saffron with the tip of the finger, so as to cause the water to wet it. If the drug is free from earthy matter, a *clear*, bright-yellow solution will be immediately obtained; if adulterated, a white powder will *instantly separate*, causing the water to appear *turbid*; and if a drop of hydrochloric acid be now added, a *brisk effervescence* will take place.

Saffron almost always contains a few of the pale yellow stamens accidentally gathered; but the pollen from them which is detached when the drug is wetted, but which is minute in quantity, is easily distinguished from carbonate of lime by not dis-

solving when hydrochloric acid is added. Moreover, the form of pollen-grains may be easily recognized under the microscope.

* * Since the foregoing paper has been in type, I have received the *American Journal of Pharmacy* for September, in which I find a note by Professor Maisch calling attention to the adulteration which I have here described.*—D. H.—*Lond. Pharm. Journ.*, Sept. 24, 1870.

SACCHARO-CHIRETTINE, A NEW PREPARATION OF CHIRETTA.

By MR. D. S. KEMP, Bombay.

The two official preparations of Chiretta, the *tincture* and the *infusion*, although efficient as containing the active matter of the drug, present inconveniences for habitual administration. The *tincture* becomes impaired in strength by keeping, and is partially incompatible with salts of iron and of the alkaloids; and the *infusion*, besides having the same incompatibilities, will not keep longer than a few hours.

The *extract*, prepared in the usual way, is a still more unsatisfactory preparation, containing, as it does, a mere fractional part of the bitter originally in the dried plant. I have not seen an extract of chiretta prepared entirely *in vacuo*; probably such would be a valuable product, although still liable to deterioration. No preparation can, in my opinion, be good which undergoes evaporation by heat or exposure to the air, as I have always found that the bitter principle in such a process disappears, and is replaced by a tasteless brown resinous matter, separating from the aqueous solution. The following is the process by which I have succeeded in obtaining a trustworthy preparation of chiretta:

An infusion of chiretta was made at 120°, and the coloring matter precipitated by an excess of solution of subacetate of lead; the product, after filtration, was a nearly colorless but very bitter liquid. The addition of a sufficiency of ammonio-acetate of lead (mixture of ammonia and solution of acetate of lead) then produced a white precipitate, consisting of the whole of the chirettine in combination with lead. The precipitate being well

* First noticed by M. Blachez, in *Jour. de Pharm.*, Avril, 1869. See this Journal, July, 1869—Ed. Am. J. Ph.

washed, first with ammonical water, then with alcohol, was treated with a mixture of sulphuric acid and alcohol and filtered. The filtrate containing the chirettine was further treated with carbonate of lime to remove the excess of acid. The filtered liquid, which was of indescribable bitterness, I had no means of subjecting to more appropriate evaporation than spreading out on a clean glass plate; the result being a transparent extract, pale yellow in color, dry at first, but in time becoming moist. This product I consider to be impure chirettine; and the same has always resulted when modifications of the above process were tried.

It is a neutral substance, quite soluble in water and alcohol. Its aqueous solution, when evaporated in the air, deposits a tasteless brown resin, into which the chirettine becomes entirely converted if the evaporation is continued to dryness. It is very difficult to preserve the pure solution at all from this change; if aqueous, it deposits the resin; if alcoholic, it darkens in color. But the addition of glycerin will preserve either solutions apparently unchanged for many months. Dilute acids do not affect chirettine; but liquor potassæ hastens its conversion into resin.

I now prepare two pharmaceutical forms of chiretta founded on this process, one, saccharo-chirettine, a dry product; the other, liquor chirettine, a liquid.

Saccharo-chirettine.—To prepare this, I follow the process above described with an economical modification, namely, instead of drying the chirettine, I add to its pure solution a proportion of sugar (20 lb. for each 60 lb. of chiretta used), dry the whole by gentle evaporation, and powder it. The quantity of bitter principle present causes quite a minute increase in the weight of the product, which is, notwithstanding, so bitter that 1 grain is perceptible in a gallon of water.

When well prepared, in a dry atmosphere, saccharo-chirettine is nearly white. It forms a clean solution with water, and in portability and handiness for administration I submit that it is a most convenient pharmaceutic form of the drug it represents. The strength of saccharo-chirettine is as one to three of the herb; 10 grains being equal to 30 grains of chiretta, or about

2½ fluid ounces of infusion. It is given as an antiperiodic in doses of 10 to 15 grains, three times daily, and here, in Bombay, considered equal to 3 to 5 grains of quinine.

A decided advantage that can be given it over chiretta is that some uniformity of strength can be guaranteed by regulating the quantity of sugar used according to the proportion of ammonio-acetate of lead required to precipitate the chirettine.

That chiretta varies considerably in strength I have found by experience.

The CHAIRMAN stated that he had not found the tincture of chiretta give any deposit on keeping in this country. Probably the difference in this respect might be due to climate.

Professor ATTFIELD remarked on the peculiarity of the active principle of chiretta in undergoing decomposition when its solution was evaporated, as being a character worth examination from a chemical point of view, as well as in its bearings on the making of pharmaceutical preparations of chiretta.

Mr. GROVES approved highly of the principle on which the manufacture of saccharo-chirettine was based. He also thought that the satisfactory results obtained by the author in this instance seemed to show the wisdom of using sugar in certain pharmaceutical preparations as a preservative, and he referred to the old practice of preparing medicines in the form of troches, etc., as one probably useful on that account, which might with benefit be reverted to in our day, especially in the case of medicines destined for export to foreign countries.—*Proc. Brit. Pharm. Conf., in Lond. Pharm. Journ., Sept. 24, 1870.*

THE PURITY OF THE YELLOW BEESWAX OF PHARMACY.

BY EDWARD DAVIES, F.C.S.

In this paper I am only able to give the result of the examination of some samples of wax purchased in Liverpool, five samples of crude wax obtained from a wholesale house, and four samples sent to me for analyses from a Liverpool firm, of the history of which I am ignorant.

I shall first give the methods employed, then a table of the re

sults, and conclude with a few remarks. The melting-point presents a little difficulty, and, after trying various methods, it was found better to take the solidifying-point. A test tube containing about 100 grains of wax was immersed in hot water in a beaker until perfectly melted. A thermometer was inserted in the tube and the water allowed to cool gradually, the wax being constantly stirred until the bulb of the thermometer could not be seen when in the middle of the wax. The temperature then remains steady during the solidification for about two minutes, and there is no difficulty in getting the same result any number of times within half a degree.

The presence of paraffin is shown by the low melting-point, but no idea of its amount can be obtained from the degree shown, owing to the varying melting-points of different samples of paraffin. The only method of determining the amount of paraffin found at all practical, consists in destroying the wax with fuming sulphuric acid. 50 grains of the wax with $1\frac{1}{2}$ oz. by measure of fuming sulphuric acid, are put into a small beaker holding about 5 oz., and gradually heated in a water-bath. Great care must be taken to stir it very slightly at first, especially if only a small quantity of paraffin is present, as the action is apt to become unmanageable. When the violence of the action is over, the heat is raised to 100° C. for about an hour and a half and the mixture occasionally stirred. It is then left to cool very slowly in the water-bath, and, when quite cold, the paraffin will be found forming a layer on the black semi-liquid mass. It is carefully removed, washed with water to remove as much of the adhering acid as possible, dried, and again heated for an hour in a smaller beaker with $\frac{1}{2}$ oz. of the acid. This gives the paraffin perfectly white, and it is then washed, dried and weighed. There can be no doubt that there is some loss, as the common paraffin employed contains coloring matters destroyed by the acid; but I know of no other method at all useful, though I have carefully tried some which have been proposed.

For the estimation of rosin, the action of cold alcohol seems sufficient. To 90 grains of pure wax, 10 grains of rosin were added, by melting them together and thoroughly incorporating. On exhausting with cold alcohol, by rubbing the wax in a mortar

with successive small portions of alcohol, filtering, and evaporating on a water-bath, a residue was obtained weighing 10.54 grains. It was brittle and, when heated, gave an unmistakable smell of rosin. Pure wax yields 2.4 per cent. to cold alcohol, and rosin is not entirely soluble, but one of these about balances the other.

No starch was found in any of the samples, and they were all perfectly soluble in turpentine.

Specimens.	Solidifying point.	Soluble in Alcohol.	Paraffin.
Pure Scotch wax.....	151.5	2.4p.c.	none
Crude wax, Gambia.....	152.5	3.10	not tested
" " No. 1.....	154.0	2.40	"
" " No. 2.....	153.0	3.60	"
" " No. 3.....	147.5	.....	"
" " No. 4.....	147.0	.....	"
" " No. 5.....	146.0	.....	none
Purchased samples, No. 1.....	153.5	1.8p.c.	not tested
" " No. 2.....	153.0	2.28	"
" " No. 3.....	152.0	3.18	"
" " No. 4.....	152.0	2.34	"
" " No. 5.....	150.5	5.20	"
" " No. 6.....	147.0	.....	"
" " No. 7.....	145.0	.....	none
" " No. 8.....	139.0	.....	13.30
" " No. 9.....	137.5	.....	36.60
Samples sent for analysis, No. 1.....	142.0	.....	42.60
" " No. 2.....	140.0	.....	43.36
" " No. 3.....	135.0	.....	56.50
" " No. 4.....	134.0	.....	56.00

These results show that the degree given in the P. B. of 140° F. is too low; pure yellow wax melts at 151.5° F., and no sample, not containing paraffin, has a melting-point below 145°. I think that 150° should be the standard, for samples containing more than 40 per cent. of paraffine may be made, to agree with the Pharmacopœia standard, if a paraffin with a sufficiently high fusing point be selected. The question may seem an unimportant one, but a difference of 16° in the fusing-point of two samples of wax must considerably affect the quality of ointment made from them, especially in hot weather.

The effect of the application of paraffin to the skin, though probably not injurious, is not sufficiently known to render its

presence a matter of indifference. Most of the samples were bought in the lower parts of the town, and the results show that in Liverpool there is not much cause to complain. I have to thank Mr. Thomas Williams for valuable assistance in working out the above results.

The CHAIRMAN said that the fatty material referred to by Mr. Davies might probably be stearin, which was used in the neighborhood of Bristol for adulterating wax sometimes to the extent of fifteen or twenty per cent. He had found as the result of experience that if there was a crack about an inch from the upper edge of the cake, together with a greasy appearance, these characters indicate the presence of stearine.

Professor ATTFIELD remarked that this was an interesting practical paper, and that the results were in favor of his suggestion that the melting-point assigned to beeswax in the Pharmacopœia should be raised ten degrees above the number now given. Some discussion took place as to the mode of determining the melting- or rather solidifying-point of wax and similar materials.

Mr. GROVES (Weymouth) pointed out that a difference of ten degrees in the result of experiment might be due to the method adopted. He recommended dipping a thermometer bulb in the melted wax, and after the film of wax had solidified upon the bulb, suspending the thermometer in water, which was gradually heated until the film of wax became transparent and liquid; then reading off the temperature at which this took place as the melting-point.

It was also mentioned that the presence of Japan wax would render the melting-point of beeswax low, but no known means seemed to be available for detecting this admixture, except the occurrence of that kind of bloom on the surface of the wax so adulterated, which is characteristic of Japan wax itself, as stated by Mr. Parkinson, Ph.D., Bradford.

Mr. DAVIES said that he had found that pure wax, when melting, passes suddenly from the opaque to the transparent condition, but that when paraffin was present the transition was gradual.

Mr. BRADY (Newcastle) recommended that as this was a sub-

ject of much pharmaceutical interest, well-authenticated samples of wax should be sent to Mr. Davies for examination, and that he should be requested to continue his inquiries so as to report on the subject at a future meeting of the Conference.—*Proc. Brit. Pharm. Conf., in Lond. Pharm. Journ., Sept. 24, 1870.*

PHARMACEUTICAL NOTES.

BY ALBERT E. EBERT.

Not the least duty of the pharmacist, though one more honored in the breach than the observance, is his obligation to communicate to his fellows of the craft such improvements in manipulation, in apparatus, and in the convenient arrangement of his shop, as his every-day experience behind the counter must occasionally suggest. How much practical, *desirable* information is hid under a bushel by this sin of omission, we can only conjecture; but if the thousands would communicate their personal experience, it cannot be doubted that a valuable fund of useful knowledge would accumulate. The following suggestions are made with no great claim for their originality or importance; but, since they are based upon actual experience, they may be of utility to others as they have been to us.

Test tubes, indispensable for their legitimate purpose, will often answer another useful end. For effecting solutions of small quantities of the alkaline or metallic salts, especially when the solvent is of a viscid nature, we have found the test tube a valuable auxiliary—more convenient in use than the mortar, less wasteful, and effecting the solution with greater despatch. We proceed by dropping the salt into the tube, adding a portion of the vehicle, and applying heat, with constant shaking of the tube. Solution quickly follows, the warm liquid is added to the remainder of the vehicle, previously placed in the vial, and the whole is mixed by agitation.

Of course, the dispenser will see that this method of procedure is not applicable where the quantity of the salt exceeds its solubility in the whole liquid at ordinary temperatures, as crystallization would occur. This relation of salt to solvent is often met with, and then the only resort is to the mortar, in which the salt

may be rubbed to powder before its mixture with the liquid, and the attachment of a "shaking label" to the vial. Solid extracts may be brought into solution by the same means with great facility.

The moral effect of such a display of chemical ware before the admiring eyes of the patient may be considered, in some rare instances, as equally beneficial with the product of the combined skill of the physician and pharmacist.

In spreading plasters extemporaneously, convenience requires and neatness demands an uncoated marginal edge. This is usually secured by pasting strips of paper along the edges of the skin, and removing them after the spreading of the plaster is effected. It is just here that a practical difficulty frequently arises. The paper edges are liable, from drying of the paste, to adhere so strongly that either paper or skin will give way upon an attempt at their removal; the application of water will then be necessary to soften the attachment, and the final result may be expected to present a daubed and uncleanly aspect. This difficulty may be entirely avoided by applying to the paste brush a little glycerine before the adjustment of the marginal strips.

COATING OF PILLS.—A prevailing fashion in pharmacy, or rather among prescribers, is the use of sugar-coated pills. This is very detrimental to the practice of legitimate pharmacy, whatever may be its effect upon those who swallow the pills. An extemporaneous process of sugar-coating is a desideratum for which our colleges of pharmacy should unite in offering a prize. In the absence of this, a very excellent substitute may be found in resin. This substance is easily applied, gives a hard, tasteless surface, a handsome appearance, and has a decided tendency to protect the pills from change. The coating cannot interfere with their medicinal action, for it is readily dissolved by the fluids of the stomach. The process of coating is easy and expeditious, and no apparatus is required.

We proceed as follows, keeping prepared a solution of resin in ether, one part of resin to ten parts of the fluid: We return the pills, after they have been rolled to shape, to the mortar in which their ingredients were mixed, pour over them a little of the resinous solution, give the mortar a few twirls, and roll them

out upon the platform of the pill machine or pill tile. By the time the label is prepared the pills will have become sufficiently dry to allow boxing. A little dusting powder, preferably lycopodium, should be dusted over them, and the work is done.

Speaking of pills, an idea occurs which is worth suggesting to the manufacturers of pill machines—namely, that these convenient implements be made to cut thirty pills instead of twenty-four. The former number of pills is much more frequently prescribed than the latter. A great improvement would be the placing of numerals before each groove, so that the operator may not be obliged to count the grooves whenever a fractional number of pills are to be divided.

While making suggestions, we will continue by adding that there is a great need for vials, especially for half, one and two ounce vials, with lips suitable for dropping liquids. With the ware of the market at present, it is almost impossible for an expert to be successful in dropping, so what must be the experience of invalids and nurses in this respect? The defect may be easily remedied by making the lips of vials for such uses broad and *thin*. If we insist in demanding such improvements as we are suggesting, manufacturers will be eager to supply them.—*Pharmacist, July, 1870.*

CULTIVATION OF CINCHONA IN MEXICO.

Mr. Hugo Finck, Vice-Consul of the North German Confederation at Cordova, Mexico, writes as follows, under date 10 July, 1870, to Mr. Hanbury, who has favored us with the extract:

“You remember sending me some seeds of *Cinchona officinalis*. I sowed them and a good many germinated, but the plants were all lost save one. That plant is now 7 feet high and looking very healthy. Afterwards I got from Mr. Nieto about a hundred small plants of *C. Calisaya*, *C. succirubra* and *C. Condaminea*, which are all growing amazingly well. Some are already 12 feet high, with leaves from 10 to 15 inches long and wide in proportion. One three year old plant flowered at the house of Mr. Nieto, but I think this was premature and caused

by some impediment in the ground, as a large stone or some other obstruction with which the roots came in contact.

"In 1866, the late Emperor Maximilian obtained some cinchona seeds from England, which he distributed in this country. Mr. Nieto got the largest share of those seeds, and as he took great pains with them he raised thousands of plants, which he distributed to a number of persons. Of these plants the greater part were lost through injudicious management, so that actually only about 300 are alive, of which number I possess one-third." —*Pharm. Journ., Lond., Aug. 20, 1870.*

THE APPRENTICESHIP AND EARLY TRAINING OF PHARMACISTS.

BY F. BADEN BENDER.

The education question being one of the foremost and most important of the day, I trust that a few observations on the early training of those connected with our own vocation may not prove uninteresting to the members of this Conference. It must be evident to all those who have thought seriously on the subject that our present system of apprenticeship is inadequate to the higher standard of scientific education required in our calling. It has answered its purpose in the past, but requires modification to adapt it to the new pharmaceutical era.

Apprenticeships are, for the most part, served in small businesses, where pharmacy proper is subservient, and necessarily so, to less dignified but more remunerative employments. The proprietors are but too glad to add to their scanty incomes the premium received with a pupil, and they maintain the advantage by getting as much as possible out of him in the way of useful service. The leisure of some and the ability of others is too limited to afford much personal instruction or direction in scientific matters to those they have undertaken to instruct in the art and mystery of pharmacy; at the end of his term the youth has, we will assume, gained much useful information connected with his business; has taught his fingers to fold a parcel neatly, and his eye to guess a pennyworth of hair-oil in a Worcester sauce bottle, but in how few cases has he any accurate systematic

knowledge of even the elements of chemistry, botany, or *materia medica*! He then proceeds, at a very small salary, to one of those superior establishments where "neither apprentices nor arsenic are kept on the premises." At length it becomes necessary for him to pass an examination; his knowledge has increased, but it is a disorderly knowledge. If he has worked, he probably feels how much of his precious time he has wasted in working in wrong directions; he finds that, instead of getting, as he expected, more leisure for study as he grows older he gets less, and he sees no other course open to him but to cram under the direction of a professional crammer. A friend who has been prepared by Mr. So-and-so recommends that gentlemen's services, and night after night he crams his memory with formulæ, decompositions, diagrams, antidotes, natural orders, and very unnatural methods of keeping certain names and facts within reach for, say, ten days. With these, if he can keep calm, and does not lose his presence of mind at critical moments, he probably gets through. But this large meal of many courses disagrees with a mind not accustomed to generous diet; assimilation does not follow; a reaction takes place, accompanied by a lasting distaste for similar mental food, and by the time the holiday which usually follows a pass is over he has become confused as to his facts, and foggy as to his formulæ, but he thanks his stars that the ordeal is over.

The outline I have given of the studies and opportunities of the apprentices of the period, though happily contradicted by many bright examples, is, I believe, broadly true. Now this system, whilst it swells the ranks of pharmaceutical chemists, and adds to the funds of the Pharmaceutical Society, is not conducive to our real progress. We must remember that the knowledge which will be useful to a man is not that which he possesses on an examination day, but that which he retains afterwards. I think we may take it as a proven fact that very few apprentices do, or even can, qualify themselves during their term. The range of studies has become so wide that very much must be done either before or after, and the advantages of doing it first appear to me many and great. A boy who had received sound elementary instruction in chemistry, botany and *materia medica*

before entering upon his apprenticeship would be to a great extent self-dependent; it would then be entirely his own fault if he did not find daily opportunities of applying and increasing his knowledge; work which would have been mere irksome drudgery to him would be interesting and instructive, because he would find in it the application of principles and laws with which he had previously become familiar.

The next question is, how is this knowledge to be given? I think by the establishment of special technical schools for boys intending to become pharmacists. Mr. Schacht has estimated the number of young men entering the business annually as 1693. Is it too much to expect that a sufficiently large proportion of these to support the experiment would be able and willing to do so? The laboratories at Bloomsbury Square are overflowing; there is no lack of students now ready to spend money for knowledge which they would have found doubly useful if obtained earlier. There is reason to believe that our body will be recruited from a wealthier class than hitherto. A considerable sum will, in most cases, have to be expended one way or another, earlier or later, on the scientific education of the chemist if he is to attain, or, at any rate, to maintain a position, and I think the earlier in his career some of it is invested the better. Moreover, I am disposed to believe that some such plan as I propose would be in the end cheaper as well as better. A pupil having spent twelve months in this technical school would be a much more useful, or at least less troublesome, appendage to most businesses than the apprentice of to-day. Possibly some of the leading firms might be willing to take him at a more moderate premium. At the end of a three years' indenture he should pass the Minor with honors, and would then be certainly able to command higher remuneration than most men who have been four years in the business can now do.

I do not propose any detailed scheme, but make this suggestion in the hope that some of you may be able and willing to help its elaboration. The course of instruction should be elementary, but *thoroughly sound*, the main object being to set up signposts, warranted, as Mr. Ince says, to point in the right direction. When the apprentice sets up his own, they too com-

monly direct him by supposed short cuts, which lead him into all sorts of tangled difficulties. The teachers in the various departments should be men of real ability and experience. I have not much faith in the educating power of the "certificated science teacher," who is now ubiquitous. Much as we may respect a young man who, in addition to the practice of some honest handicraft, such as shoemaking, lectures on chemistry, botany, and one or two other branches of natural science, to the mechanics and artisans of his neighborhood, we may doubt if he is the most suitable person to influence boys better educated in ordinary subjects than himself. It is generally admitted that a thorough master of a science is required to impart quickly and accurately the rudiments of his subject, and these are what we want.

The establishment should possess a good museum of drugs and a garden of medicinal plants, and should be under the direction of a thoroughly practical pharmacist. How much might be learned by a boy in such a school in, say, twelve months! It should give him such an impetus as would last whilst he lived. How interesting to him would be the occasional half-hour's stroll in the country, for he should know much of physiological and something of systematic botany by that time! He would pursue his studies with the signposts full in view; and would he make a less successful business man for the scientific bias he had received? I think not. The acquirement of business tact would be just as necessary, but none the more difficult. Amongst the minor advantages to be derived from this proposed year's training may be mentioned the bond of fellowship which would be formed between kindred spirits, and which, thus early established, would greatly tend to the diffusion of pharmaceutical knowledge and the furtherance of the objects aimed at by our own Conference.

If the introduction of this subject brings about a discussion from which any more practical conclusions shall be derived, I have not wasted your time this morning.—*Proc. Brit. Pharm. Conf., in Lond. Pharm. Journ., Sept. 24, 1870.*

ON PERMANGANATE OF POTASSA.

By B. HOWARD RAND, M.D.,

Professor of Chemistry in Jefferson Medical College.

This compound having become a popular "new remedy" with many practitioners, and having undoubtedly valuable as well as dangerous properties, I propose to discuss these in a few words.

The chemical nature of the salt need not be dwelt upon. Its method of preparation, with the chemical changes involved, will be found in the United States Dispensatory. It is enough to say that it is, perhaps, next to chromic acid or chloro-chromic acid, the most active oxidizing agent known. In contact with reducing agents or organic matter, it is instantly decomposed, becoming reduced to black oxide of manganese and caustic potassa. The oxygen given off appears to be, in great part, in the form of ozone, and rapidly attacks and burns up all varieties of organic matter, although some resist longer than others.

In consequence of this power of oxidation, it has been largely employed externally as a detergent and deodorizer, and internally in diseases in which an oxidizing agent is supposed to be indicated.

As to its value where used internally there is abundant testimony, yet, I fear, but little evidence. The enthusiasm with which a new remedy is employed by the practitioner seems to give faith to the patient, and "cures" follow which are properly recoveries. The same is true of secret remedies, which, however apparently successful, are generally abandoned when their true nature becomes known.

From its caustic character, permanganate of potassa is necessarily used internally in small doses,—that is, about half a grain. One grain of the salt is supposed by the chemist to be decomposed by five grains of ordinary organic matter, or half a grain by two and a half grains of the same. Suppose the permanganate to be given in solution in distilled water, the mixture made in absolutely clean vessels and dispensed from the same,—conditions very rarely fulfilled in practice,—we have the chance of its not meeting with two and a half grains of organic matter in its passage to the stomach. Then, considering the

organic contents of the stomach, and the fact that the tissues themselves are acted upon, we see how utterly impossible it is that any of the permanganate shall enter the circulation, there to give up its oxygen.

Moreover, as its color and taste, when in solution, are objectionable to most patients, some practitioners exhibit it in pill, in which form it is, in most cases, decomposed before it is swallowed. Dr. C. M. Fenn published, in the *Pacific Medical and Surgical Journal*, in 1867, a paper, which was largely copied, and is noticed in *Ranking's Abstract*, xlvii. 18, lauding the virtues of the permanganate in rheumatism, and giving successful cases. He gave half-grain doses in *raspberry syrup*. He believes that it converts lactic into carbonic acid. He certainly did not administer permanganate of potassa. Whether the black oxide of manganese and caustic potassa, which the patients did swallow, would convert lactic into carbonic acid, or otherwise cure rheumatism, we cannot say; but it is, at least, not probable.

For external use in many surgical cases, the permanganate of potassa possesses much value as a stimulating and deodorizing application. We owe to Mr. Condry, of Lond,* its introduction as a deodorizer. It is highly efficient, and at the same time is itself without smell. There are, however, a few practical points connected with its use which seem to be often neglected. It should not be applied to bandages or dressings, as it is decomposed by the organic matter of the fabric, and is lost; at the same time the dressings are discolored and rotted. It should not be applied with a sponge, for the same reason. Shallow dishes, containing a strong solution,—about one or two ounces to the pint,—allowed to stand in the sick-room, will be of much use in removing foul smells. It is not adapted to solid filth, although highly efficient, on account of the quantity required and consequent expense, but may be used with excellent effect in chamber-vessels, etc., after they have been emptied and rinsed.

A word as to economy. One ounce of the crystalized salt costs about as much as a pound of the crude, which is just as

* *Air and Water, their Impurities and Purification.* London, 1862.

good for deodorizing purposes. The crude gives a greenish solution, which even while cold, but more rapidly and completely upon boiling, passes into the deep red so characteristic of the permanganate, and is fit for use.

As a test for organic matter in air and water, its accuracy has been called in question, on the ground that it does not attack all kinds of organic matter with equal facility,—some, as starch, resisting its action for a long time. It must be admitted, however, that it is, at present, the only *practical* test that we have, and certainly shows very rapidly and clearly the presence of *hurtful* organic matter in water or in air. It can be applied by any one, it being only necessary to use a weak solution; the disappearance of the color indicates the presence of organic matter. In time of epidemics, such as cholera or dysentery, this test might be of much value in singling out the contaminated from the pure water. It is, perhaps, well also to recall the fact that this test forms the readiest means of purifying foul water. If added until the water acquires a permanent faint pink tinge, we are certain that injurious organic matter has been destroyed. Then, as Condry suggests, if a piece of clean stick be put into the liquid, or if a little tea or coffee be added, the pink color will disappear, and the water will be fit for use. The very small amount of potassa remaining in solution could not possibly do harm, as in any ordinary case it would not amount to one-hundreth part of a grain to the gallon.—*Med. Times, Phila. Oct. 15, 1870.*

NEW TEST SOLUTION FOR SUGAR.

J. Loewe recommends the use of glycerin in place of tartaric acid for the preparation of an alkaline copper solution for the detection of sugar. Glycerin entirely prevents the precipitation of oxide of copper, and the solution prepared with it has the advantage of being less liable to alteration when kept than the tartaric solution is.

To prepare a test liquid of this kind 16 grams of sulphate of copper should be dissolved in 64 parts of water; to this solution is gradually added 80 c.c. of soda solution (1.34 sp. gr.), then 6

or 8 grams of glycerin, which redissolves the hydrated oxide of copper that had been precipitated.

This liquid should not become turbid when diluted with two-thirds of bulk of water nor when boiled.

The copper solution may also be prepared by dissolving hydrated oxide of copper in a mixture of glycerin and caustic soda. The hydrated oxide is best obtained by adding soda solution to an ammoniacal solution of sulphate of copper, washing the precipitate and drying over oil of vitriol.

For 6 grams of this hydrated oxide there should be 6 or 8 grams of glycerin, 50 grams of water and 56 grams of soda solution of the strength above mentioned. This mixture is then diluted as may be requisite. The author prefers this solution to the other. It does not become turbid with alcohol.

The solutions will not bear considerable dilution without depositing hydrated oxide of copper, but this may be prevented by increasing the proportion of glycerin or of soda.—*Lond. Pharm. Journ.*, Sept. 3, 1870, from *Zeitschrift für analytische Chemie*.

NOTES ON THE CULTIVATION OF THE OPIUM POPPY IN AUSTRALIA.

By JOHN W. HOOD, Chemist, Melbourne.

This paper was communicated by Mr. T. N. R. Morson, together with the following letter addressed to the Chairman of the Liverpool Local Committee:

38 QUEEN'S SQUARE, W. C., Sept. 10, 1870.

My dear Mr. Abraham,—I this day send you the paper on Opium received last mail from Melbourne; it is a highly interesting paper, and at the present time a very important one. I have no doubt that very good opium can be produced in Australia, and at a reasonable price. To the inhabitants of this part of the globe its home culture is very important, on account of the heavy duty on that imported from Europe. I have examined several samples sent me at various times, and although they varied very considerably in the quantity of morphia they contained, I consider them all to be *genuine opiums*.

I also send you the specimens I received per post with the paper. Please exhibit them. I should like to have them returned to me after the Conference is over. I wish to test some of them, and afterwards to send them to the Museum in Bloomsbury Square, in Mr. Hood's name.

T. N. R. MORSON.

The farmers in Victoria, for a good many years, have been touched with a desire to try new crops and new industries. Among the many ventures, suitable or unsuitable, was the cultivation of the poppy and the production of opium, which has been tried with varying success for the past four or five years.

I have felt some interest in this subject and have collected many samples from various districts, and also performed some rather crude experiments myself on the growth of the poppy, which I beg to submit. I feel that, perhaps, my conclusions may be of little value, but as I propose extending my investigations annually, I hope eventually to arrive at the best means of producing the greatest amount of opium together with richness in morphia, from a given quantity of poppy plants.

The first opium produced in any quantity in Victoria was at Sunbury, a village about twenty-two miles from Melbourne. Soil strong, rich, volcanic. It* was a good-looking opium; on analysis it only yielded some 2 per cent. of morphia, but contained an abnormal amount of other opium constituents, notably narcotine, of which there was about 8 per cent. I sent samples of this, and other opium from about the same locality, to T. N. R. Morson, Esq., who, as reported in the *Pharmaceutical Journal* for January, 1869, stated, "It was of great beauty as far as external characters were concerned, it had the perfect odor of good opium, and it dissolved with the Persian character, but, singular to say, it contained very little morphia, but a great abundance of the other principles known to exist in opium."

This opinion, from so well known an authority on all concerned with opium, of course reached Melbourne, and was published here with the effect of greatly discouraging the industry. However, a few did continue to plant and produce, and this last season probably a hundredweight and a half were brought into the market here, where it realized about thirty shillings (30s.) per lb., as it proved to be a very good opium, containing from 8 per cent. to 10 per cent. of morphia.

Mr. Morson's opinion being so much thought of, I sent him samples. His report being a favorable one, I had it published in the agricultural papers, and now some attention is again given

* Sample 1.

to the opium culture, and I expect that sufficient will shortly be made to enable a trial shipment to be made to London, as from the high price ruling for opium and its preparations it is very desirable that new sources of supply be discovered. With the beautiful climate and fine soil of Australia, eminently adapted for poppy-growing, enough opium should be produced to make a marked influence on the price in the European markets, as the growers here will be well paid at from ten to twelve shillings per pound; but as our consumption here is enormous, owing to the great number of Chinese colonists, it will probably be some years before the supply greatly exceeds the local demand.

I send herewith samples of opium from various localities, produced in 1867-8, 1868-9. and 1869-70.

The poppy is sown here in the months of June, July and early part of August, the opium being collected in the summer months of January, February and March. Most of the seed was obtained from Smyrna, and produces plants from five to seven feet high, each bearing three or four flowers of four large white petals. There is also some East Indian variety cultivated, with double purple or black flowers, but it is not popular, as it only has one flower on each plant and yields but little opium.

In 1868 I was desirous of ascertaining whether special manures or manner of culture had any influence on the amount of opium yielded and its richness in morphia, and, to determine it, made the following experiments:

I took six plots of virgin ground and treated them as follows:

Nos. 1 and 4 were manured with well decayed stable manure.

Nos. 2 and 5 were entirely without manure.

Nos. 3 and 6 were manured with spent lime from soft-soap works, containing about 3 per cent. of potash, and with Peruvian guano.

Each plot was the same size, and was drill-sown with the same lot of seeds on the following dates:

Nos. 1 and 2 sown on June 13th.

Nos. 3 and 4 " " July 1st.

No. 5 " " 12th.

No. 6 " " 20th.

The plants were all above ground about ten days after each sowing, and about a fortnight after I thinned them out, leaving 150 plants on each plot. Plots 1, 3, 4 and 6 received no artificial irrigation, but depended for moisture entirely on the rainfall, while Nos. 2 and 5 were watered well every week until just before flowering. When ripe, I carefully cut the heads and collected the opium, obtaining the following yields:

No.	Yield of Opium in Grains.
1	153
2	177
3	159
4	171
5	189
6	203

The greatest yields were from Nos. 5 and 6, the last planted. Nos. 2 and 5, which were without manure, but with plenty of moisture, yielded much more than Nos. 1 and 4, those manured with stable manure. The opium was of the ordinary consistence, and, as far as possible, free from leaves or accidental impurities. Now, as to the richness of the samples in morphia.

On assay, from *one hundred* grains of each sample, well dried, I obtained:

No.	Grains of Morphia.
1	$4\frac{2}{10}$
2	$6\frac{3}{10}$
3	$6\frac{9}{10}$
4	$4\frac{6}{10}$
5	$6\frac{5}{10}$
6	$7\frac{1}{10}$

I also obtained a notable quantity of morphia from the aqueous extract of the bruised green heads from which the opium had previously been as far as possible extracted.

As the same seed, differently treated, give plants which yielded opium of different values, I naturally infer that manures, nature of soil, want of moisture, or excessive supply of water, and general manner of cultivation, have a great influence on the value of the opium produced. Last season (1869-70) I per-

formed the same experiments with relatively the same results. This year I hope to extend my operations and try many other manures, and have requested all who are growing opium to favor me with all particulars respecting manures, soil, mode of culture and collection and yield, and, if possible, a sample of the opium.

I cannot imagine my experiments as at all conclusive, as the differences might have occurred on different parts of the same ground; but if I find that treatment with stable manure, as a rule throughout the colony, gives a worse yield than if manured with guano, I may then reasonably think that Peruvian guano is more fit for manuring poppies than stable manure; and so on, until I arrive at the best manure and best method of cultivation of the poppy, so as to obtain the greatest and most valuable yield of opium.

Samples of opium accompanying this paper:

No. 1. Produced in 1867-8, from 80 poppies, at Sunbury, twenty-two miles from Melbourne.

No. 2. Produced in 1869-70, near Gisborne, thirty-two miles from Melbourne, on a river-flat of rich alluvial soil; yield 84 lbs. per acre.

No. 3. From near Bairnsdale, Gipp's Land, in a very cold climate; yield over 60 lbs. per acre.

No. 4. From near Gisborne, 1867-8; yield 50 lbs. per acre.

No. 5. Grown in 1868-9, at Soh Yarra, near Melbourne, collected and dried on tin plates, so that it is the pure juice dried.

No. 6. Grown in 1868-9, at Dromana, on the shores of Port Philip Bay, in very sandy soil; the produce of 420 plants.

Mr. DYMOND (Birmingham) observed that the plan adopted by the author, of cutting off the poppy capsules and then extracting the opium from them, was not that practised in the East. He had made experiments with garden poppies.

Mr. SUTTON (Norwich) said that some years ago a medical gentleman in his neighborhood grew a considerable number of poppies, and extracted opium by incision from day to day, but

the air-dried gum contained less than two per cent. of morphia. The season, however, was damp and somewhat cold, and this he (Mr. Sutton) believed was detrimental to the production of any large proportion of morphia. The question was really very little understood, but from experiments in various parts of the world it seemed an undoubted fact that fine, dry, warm weather produced, in any tolerable climate, a fair quality of opium; whereas, in a contrary season, the other and less valuable constituents (narcotine, &c.) were predominant. It was therefore probable that the effect of sunlight and warmth would be to convert a portion of these constituents into the more valuable form of morphia. He also stated that it was his intention to grow some poppies in his own district, should he be able to procure good seed, and also forward some to Australia, for the purpose of investigating the matter more fully.

Mr. DYMOND remarked that in his opinion we ought to go to Smyrna for seed.

Mr. BRADY said he understood some of the Norfolk specimens of opium contained a very large percentage of morphia. He believed it was considered impossible to produce opium on a large estate with a large staff of laborers; and in Asiatic Turkey poppies are grown for the purpose only by small farmers. The French had tried the growth of poppies in Algeria, but with little success, so that other conditions besides climate seemed to be requisite. The extract of poppy capsules had been found by Mr. Dean and himself to differ entirely from true opium in microscopic characters.

Mr. GROVES (Weymouth) expressed his belief that the production of opium was a continuous process of the incised poppy, and, therefore, that the proposal to obtain opium, or anything resembling it in strength, by expressing the unripe capsules, would prove delusive. He had, himself, on two occasions, examined carefully the ripe capsules. On the first occasion he had recovered sufficient alkaloids to justify further experiment. The second experiment was conducted upon 50 lbs. of crushed capsules. From that large quantity was obtained, narceia 23 grs., morphia 75 grs., narcotine 36 grs., codeia 33 grs. He had a

decided impression that the "crushed" capsules were inferior in quality to the "poppy-heads."—*Trans. of Brit. Conf. in Pharm. Journ., Lond., Oct. 1, 1870.*

A NEW ANTISEPTIC.

The hydrated chloride of aluminium, to which Mr. John Gamgee has recently drawn the attention of medical men and of the general public, appears to be a valuable antiseptic. It is quite as potent as chloride of zinc or carbolic acid, and is at the same time non-poisonous, and devoid of unpleasant smell of every kind. These qualities will no doubt insure its being extensively used, and at no distant date we may expect it to displace the antiseptics which are at present in vogue.

It is somewhat strange that this substance should have been so long overlooked as a possible antiseptic, and Mr. Gamgee certainly deserves credit for suggesting the utilisation of it for this purpose. The reason why it has been passed over is probably to be sought in its not being a waste product in any common chemical manufacture. The anhydrous chloride of aluminium, which is manufactured in order to serve for the preparation of metallic aluminium, is far too costly on account of the troublesome nature of the process by which it is prepared—to wit, by passing chlorine at high temperatures over a mixture of alumina and charcoal. By placing the anhydrous chloride of aluminium in water, it is of course converted into hydrated chloride.

The most economical process for the preparation of the hydrated chloride of aluminium appears to be by double decomposition between sulphate of alumina and chloride of calcium (both of which are cheap commercial products). When solutions of these two salts are mixed together, sulphate of lime is formed and appears as a precipitate, whilst the hydrated chloride of aluminium remains dissolved.

On allowing the aqueous solution to evaporate at a very gentle heat and afterwards cooling, crystals of hydrated chloride are produced. If an attempt be made to drive off the water from the hydrated chloride by the application of heat, decomposition will take place. Hydrochloric acid is evolved under these con-

ditions, and oxy-chloride of aluminium is formed, and by pushing the process, alumina is obtained as the ultimate fixed product.—*Med. Gaz., New York, Sept. 24, 1870, from Lancet.*

ANCIENT USE OF ODORIFEROUS PLANTS.

In his introductory address to the Medical Section of the British Medical Association at their late meeting at Newcastle-upon-Tyne, Dr. Rumsey, referring to a remarkable series of observations which Professor Mantegazza has reported to the Institute of Lombardy, made the following remarks:

"The experiments were not made under the dull sky of Britain, but in sunny Italy. We have all heard how Acon of Agrigentum, and other followers of Empedocles the physicist, employed aromatic and balsamic herbs as preventives of pestilence, often burning them, sometimes planting them round their cities. So also Herodian records (*Langius Jo., Florilegium, Morbus*, p. 1854; Lugduni, 1648) that, in a plague which devastated Italy in the second century—the counsel of the doctors having been taken—strangers crowding into Rome were directed to retreat to Laurentum, now San Lorenzo, that by a cooler atmosphere, and by the odor of laurel, they might escape the danger of infection. Some of us may have smiled at the latter part of the advice. Could the scent of herbs and flowers do more than conceal the presence of infectious matter in the air? Mantegazza now replies in the affirmative. He says that in the oxidation of the essences of odoriferous plants a large quantity of ozone is evolved, at least as much as is produced by phosphorus or electricity; also that, in the greater number of these cases, ozone is developed only by the direct rays of the sun, although in others the action, commencing in solar light, is found to continue in darkness. Some details of these interesting experiments have appeared in the scientific periodicals, so I need only mention that among the plants which largely develop ozone on exposure to the rays of the sun, are cherry-laurel, clove and lavender; among flowers, the narcissus, hyacinth and mignonne; and among perfumes, similarly exposed, eau de Cologne, oil of bergamot and some aromatic tinctures. Flowers destitute

of perfume are said *not* to produce ozone. The professor, therefore, recommends the cultivation of herbs and odorous flowers in *marshy districts and in places infected with animal emanations.*

"The destruction of the demon Malaria, by a spirit begotten by sunlight out of flowers—if it be confirmed by subsequent observation—not only explains the good effects of what might seem to have been merely speculative or empirical advice, but also affords a beautiful confirmation of an ancient myth by modern science. When Apollo the Healer, by his life-inspiring and health-restoring rays, penetrates the loveliest objects in creation, and draws forth from them a mysterious purifier—a mighty but invisible disinfectant,—the god of medicine may be said to administer to a plague-stricken people a most potent remedy concealed in the most grateful and attractive forms."—*Pharm. Journ., Lond., Sept. 3, 1870.*

GUARANA—*PAULLINIA SORBILIS*, MART.

By M. C. COOKE, M.A.

The remarkable product called Guarana has not been many years known in Europe. The tree whence it is obtained belongs to the Order *Sapindaceæ*, and is abundant in the province of Amazonas, along the banks of the Tapajos, Rio Negro, etc., as well as in Guiana and Venezuela. The fruit, scarcely as large as a walnut, contains five or six seeds, which are roasted, then mixed with water, and moulded into a cylindrical form resembling a large sausage, then finally dried in an oven and offered for sale. Guarana is used extensively in Brazil, Guatemala, Costa Rica, and other parts of South America, as a nervous stimulant and restorative.

Besides its medicinal properties, this substance has a reputation for affording a refreshing beverage similar in its effects to tea and coffee. It is grated into a powder, very like powdered cacao in appearance. Two spoonfuls of this powder are mixed in a tumbler of water, and this drink is regarded as a stimulant to the nerves, and, like strong tea or coffee, is said to take away the disposition to sleep.

The active chemical principle is an alkaloid first discovered

by Dr. Theodore von Martius, and called by him Guaranine, but since shown by Dr. Stenhouse to be identical with Theine. Guarana contains more than double as much of this alkaloid as good black tea, and five times as much as coffee, the proportions being 5·07 per cent. in Guarana, 2·13 per cent. in tea, and 0·80 to 1·00 in coffee.* The same alkaloid is found to the amount of 1·25 per cent. in maté, or Paraguay tea, the produce of several species of *Ilex*.

It is rather a singular coincidence that the same alkaloid should prevail in all the principal substances employed in a similar manner as beverages in different parts of the world,—in the tea of China and India, the coffee of Arabia, the cacao of Central America, the maté of South America, and the Guarana of Brazil. M. Fournier has found in the last named substance, besides tannate of caffein, the following principles: gum, starch, an acrid green fixed oil, a concrete volatile oil, scarcely soluble in water, a peculiar principle not precisely determined, and tannic acid.†

According to the 'Technologist,' there is exported annually from the city of Santarem about 16,000 lbs. of this substance, valued at eightpence or ninepence per pound, and on the Rio Negro it has been sold as low as one penny per pound. Specimens were exhibited in the Brazilian Court of the International Exhibition of 1862, made by the Amazonian Indians, who prepare it for their own use, and for conveyance to Para, Matto Grosso, and Goyaz. Six different preparations made in Vienna from this substance were also shown in the Austrian Court.

When Guarana was first employed in France medicinally, it sold at the rate of from four shillings to twenty shillings per ounce, but has since gone down in price. It is included amongst the non-official substances of the 'United States Dispensatory.'

Its effects upon the system are said to be those of a tonic, but they do not appear to have been accurately investigated. It is habitually employed by the Indians of Brazil, either mixed with

* For an account of Dr. Stenhouse's researches, see *Pharm. Journ.* 1st ser. Vol. XVI. p. 212.

† *Journ. de Pharm.*, April 1861, p. 291.

articles of diet as with cassava or chocolate, or in the form of drink, prepared by scraping it, and suspending the powder in sweetened water. It is considered by them useful in the prevention and cure of bowel complaints. Dr. Gavrelle, who was formerly physician to Dom Pedro, in Brazil, called the attention of the profession to it some years since in France. He had found it advantageous in the diarrhoea of phthisis, sick headache, paralysis, tedious convalescence, and generally as a tonic. By Dr. Ritchie, surgeon in the British Navy, it is highly recommended in irritation of the urinary passages.* Dr. Hervé has been in the habit of using it daily for five or six years, and has never failed to derive advantage from it in idiopathic diarrhoea, even in the most obstinate cases.†

It may be given in substance, in the quantity of one or two drachms, scraped into powder, and mixed with sweetened water, but the most convenient form of administration is that of spirituous extract. According to M. Dechastelus, alcohol is the only agent which completely extracts its virtues, ether and water effecting this object but partially. Of the extract eight or ten grains may be given during the day, in the form of pill. It may also be taken along with chocolate as a drink.‡

Another species of *Paullinia* (*P. cupana*) growing on the banks of the Orinoco river, is also said to yield a similar substance. Guarana, or Paullinia, as it is sometimes called, has never obtained general favor in this country.—*Pharm. Journ., London, Sept. 17, 1870.*

IRON AND HYDROGEN.

By DR. KLEIN.

The author, a pupil and collaborator of Professor Jacobi, of St. Petersburg, states, that the iron obtained by electrolysis is not, as has been often thought, the pure metal, but, on the contrary, a compound or mixture of iron and hydrogen, which, when heated to redness, gives off an enormous amount of that gas, and becomes, while greatly increasing in bulk, a silver-white, very

* *Ed. Month. Journ. Med. Sc. N.S. v. p. 467.*

† *Brit. and For. Med. Chir. Rev., Jan. 1858, p. 192.*

‡ *United States Dispensatory, 12th ed. p. 1578.*

soft ductile, and malleable metal, which decomposes water readily below its boiling-point and oxidises most rapidly.—*Lond. Chem. News*, Sept. 23, 1870.

A VEHICLE FOR THE INTERNAL ADMINISTRATION OF CHLOROFORM.

To the Editor of the Medical Record :

The want has been felt by many physicians of a good vehicle for the internal administration of chloroform. Several formulæ have been devised to meet this, but none, that I have seen, do so perfectly. Some are of difficult preparation; others contain sulphuric ether, which is objectionable, and all contain too little chloroform for convenience.

I have lately been using a solution of chloroform in glycerin, which answers the purpose so completely as to leave little to be desired. By a little care in rubbing it up, one part of chloroform by bulk can be dissolved in three of glycerin. This solution is perfectly clear, is bland to the taste, and has but a slight odor of chloroform.

As glycerin is acceptable to almost every stomach, it admits of a wide range of application. It can be taken readily as it is, or can be diluted with water to any extent, without disturbing the solution. Curiously enough, the addition of water immediately increases the smell of chloroform without any precipitation of it. In preparing it, it is best to take one part of chloroform with two parts of glycerin, add the chloroform very slowly, and rub up carefully. Then put it in a bottle, and let it stand twenty-four hours. A little chloroform will have deposited at the bottom. Separate this, and rub it up with the third part of glycerin, then mix it with the rest, and the solution is complete. No further separation will take place. Six ounces of glycerin with two of chloroform will give seven fluidounces of the solution, so that each fluidrachm contains about seventeen M. of chloroform.

From the faint odor of the prepared solution I judge that the glycerin protects it almost entirely from evaporation, although some slight loss may occur while preparing it, which it might be well to make allowance for.

I have used only Squibb's chloroform and pure article of glycerin, and cannot say how inferior grades may answer.

Having used it in a large variety of cases with entire satisfaction, I can confidently recommend it to others.

Respectfully,

G. WILSON MURDOCK, M.D.

Cold Spring, N. Y., April 30, 1870.

—*Medical Record, N. Y.*

ON WAX MILK.

BY HERMAN KOCH.

To the Druggists' Circular:

After carefully perusing the article on wax milk, contained in the July issue of your Journal, I concluded to try the experiment of making and using the article named, but found the result very unsatisfactory. I find that this so-called wax-milk in the first place does not contain wax enough for most practical purposes, and that furthermore its corrosive, alkaline nature will interfere with many uses, such, for instance, as renovating finely polished furniture, picture frames, etc. If paper is to be impregnated by means of this milk, several coats are required which dry slowly, and on account of the friction in applying the same are very apt, especially in the place of glazed or sized paper, to destroy the smooth surface. The necessity of immersing the sheets in water to remove the uncombined alkali is an additional objection to this process.

After having obtained the above results I concluded to try other "solvents" of beeswax, which, while not too expensive, would evaporate without leaving any smell or residue behind. Turpentine I found defective in both these particulars, especially when not quite fresh.

Benzine will dissolve a large proportion of wax, especially when heated to the boiling point, which can be easily effected without danger of explosion, by placing a bottle containing the liquid in water heated to between 150 and 200 degrees F. The solution, however, will deposit a cloudy sediment upon cooling. Nevertheless, it can be readily used for producing wax paper, or

in fact, for all manipulations where the object is to produce a thin uniform coating of wax on any foreign substance. The benzine evaporates completely inside of a few hours without leaving a trace of smell behind.

The best solvent, however, I found to be bisulphide of carbon. This substance readily produces a concentrated clear solution of wax, even without the aid of heat, and evaporates so quickly, that wax paper produced by its aid is ready for use within a few minutes after being impregnated. This latter manipulation should be performed quickly and on both sides by means of a soft sponge.

This solution will be found especially adapted for coating gypsum statuettes and other similar work.

It may also be used for closing up small cracks in furniture prior to being varnished or painted, as also for bedsteads to exclude bed bugs. For the former purpose it may be colored to harmonize with the furniture.

The use of this "Wax Varnish" will be found very convenient, especially during the summer months, when gas, stoves and charcoal furnaces are in general use, which will not produce the uniform heat over a large surface that is necessary to make good wax paper according to the usual plan.

Cincinnati, August, 27, 1870.

Drug. Circ. & Chem. Gaz. Oct., 1870.

REPORT ON OPIUM PRODUCTION IN WURTEMBERG.

By JULIUS JOBST.

The author states in this report the results of this year as follow :

Though large quantities of poppies were sown last spring, the crop rarely did well in consequence of the continued dry weather. This alone put an end to any prospect of considerable development in opium cultivation for the present year, and the scarcity of laborers at the time of gathering was for a time a further hindrance. Subsequently, when the influence of the war had driven many to this work, the best time for collection was past, and the poppies ripened too quickly, owing to the great heat.

On the contrary, the price of the new Asiatic opium admitted of the best Würtemberg opium fetching as much as 34s. per pound. At this price the earnings of a laborer would amount to 2s. 6d. a day, which is good, considering that old men, women and children could be employed for the purpose.

The opium of this year is much superior to that previously grown. The amount of morphia it contains is 12 per cent., even in samples that are somewhat moist.—*Lond. Pharm. Journ.*, Oct. 15, 1870, from *Gewerbeblatt aus Würtemberg*.

Minutes of the Philadelphia College of Pharmacy.

A stated meeting of the Philadelphia College of Pharmacy was held at the College Hall, September 26, 1870, at 3½ o'clock, P. M. Dillwyn Parrish, President, in the Chair, and twenty-four members present.

The minutes of the previous meeting of the College were read and approved.

The minutes of the Board of Trustees were read by Alfred B. Taylor, Secretary of the Board, and approved.

The Committee on Latin Labels, to whom was referred the subject of a new edition of labels, not being ready to report, was continued.

The delegates to the American Pharmaceutical Association presented the following report:

"The delegates appointed in June last to attend the American Pharmaceutical Association report, that at the time appointed it became apparent two of the delegates would not be able to attend, when the name of James T. Shinn for Charles Bullock, and Henry N. Rittenhouse for Thomas S. Wiegand, were substituted.

The meeting convened at the University of Maryland about the time appointed; E. H. Sargent, of Chicago, President, and Prof. Maisch, Secretary. Soon after the meeting was organized it was resolved that a telegram of fraternal greeting be sent to the meeting of the British Conference at Liverpool, then in session, and in the evening a similar telegraphic message came from the Conference, which had been sent before the reception of the Baltimore telegram.

The annual address of the President was listened to with considerable interest; among the facts mentioned was, that the membership, without the additions of the present meeting, is set down at 831. The Committee on Nominations was appointed at this sitting. At the second meeting a ballot was held, which resulted in the election of Richard H. Stabler, of Alexandria, Va., as *President*, and of Flemming G. Grieve, of Georgia, George G. Steele, of California, and Eugene L. Massot, of Missouri, for

Vice-Presidents. T. S. Wiegand as Chairman of the Executive Committee, and William T. Wenzell as Chairman of the Committee on the progress of Pharmacy.

The report of Dr. F. Mahla, of Chicago, on the progress of pharmacy was, as usual, an extensive document, involving much labor and research. No report was made by the Committee on the Drug Market, this being the second year that this committee has failed to do its duty. The number of special reports to queries was very deficient, more than half of the reporters having failed to reply. Several excellent volunteer papers were read, among which, that of Dr. E. R. Squibb on fluid extracts, and on percolation as a means of producing them, was the most important. Dr. Squibb also made a valuable verbal communication on the manufacture and characteristics of chloral, by request.

Among the special committees appointed to act in the interim, was one on adulterations and sophistications; another to compile a new General Index to the Proceedings; another to consider and report next year on the suggestion to invite the International Congress of Pharmacutists to meet in the United States in the year 1876, the Centennial Anniversary of our Government; a fourth, on pharmaceutical legislation, and a fifth, to draft and send an address of felicitation to the North German Apothecaries' Association on the occasion of its 50th anniversary.

On the afternoon of the third day, the meeting adjourned to meet in St. Louis on the second Tuesday in September, 1871.

It would be improper to pass over unnoticed the exhibition of chemical and pharmaceutical preparations and apparatus held during the sessions in the University building, which was a decided success; as also, to testify to the courtesy and hospitality extended to the visiting members by their brethren of the Monumental city."

Signed on behalf of the delegates by William Procter, Jr.

The report was accepted and referred for publication with the minutes.

William Procter, Jr., on behalf of the delegates to the Baltimore Educational Conference, made a verbal report, which he was requested to write out for publication in the minutes.

"The delegates convened by the call of the Maryland College of Pharmacy met in the Hall of that College, at Baltimore, on the 14th and 15th of September, 1870. Representatives were present from the Maryland College, the New York College, the Chicago College, the New Jersey Pharmaceutical Association, California Pharmaceutical Society, the Philadelphia College and the Massachusetts College. The meeting was organized by the election of Joseph Roberts, of Baltimore, *President*, and Prof. J. F. Moore, of Baltimore, *Secretary*, (William Wright, Jr., of New York, acting *Secretary pro tempore*.) The business was opened by the reading of a series of queries which embraced the objects of the meeting. [See page 501 for these and the details of the proceedings.] The discussion of these queries *seriatim* occupied most of the time of the Convention, and resulted in the adoption of the following resolutions:

Resolved, That in the opinion of the Convention more attention to the preliminary education of those who propose to enter the business of pharmacutists is needed, and it is earnestly recommended to the colleges and societies of pharmacy to urge their members and the profession of the United States generally, to give greater care to this subject in taking apprentices.

Resolved, That we recommend that apprentices should not be taken under sixteen years of age, and shall be twenty-one years of age before being entitled to receive their diploma.

Resolved, That the branches to be taught in Colleges of Pharmacy should, *at least*, include lectures on general chemistry, elementary botany, materia medica, and the general facts and principles of pharmacy, and, when practicable, opportunity should also be provided for instruction in practical and analytical chemistry.

Resolved, That it is earnestly recommended that whatever method [of examination for graduation] be adopted should include questions, both oral and written, and that particularly a familiarity with the physical properties of specimens should be insisted on.

Resolved, That diplomas should not be recognized as evidence of sufficient qualification unless based on four years' practical service in the dispensing shop.

Resolved, That each college be requested to take action on the questions presented at this Convention, and report to this body at its next meeting.

The Convention adopted a resolution looking to a permanent organization to meet annually at the time and place of the meetings of the American Pharmaceutical Association, with a President and Secretary as officers."

T. S. Wiegand, chairman of the Sinking Fund Committee, informed that the committee had nothing to report since last meeting.

The Committee on Deceased Members read the following sketch of our late member Alexander Fullerton, Jr.

"Alexander Fullerton, Jr., was the only son of Alexander Fullerton, a respectable Philadelphian of the old school. He was born September 24, 1796, was educated in his native city, and being designed for the business of a druggist, was placed in the store of W. Heyl, 205 High street, with whom, and his partner Mr. Wykoff, he completed the usual term of his apprenticeship, and remained for some years after attaining his majority. About the year 1823 he established himself in business with John Olaxton, under the firm of Fullerton & Olaxton, and after the year 1835, continued on his own account at the well remembered stand 174 Market street, (old number,) until he was succeeded by the firm of Moyer & Hazard.

His strict attention to business, and well known integrity, brought him a large share of trade, but increased competition and the gradual change

in business habits induced him to retire when he had acquired a moderate competence, and to devote himself to works of public beneficence. He was for many years a trustee of the First Presbyterian church of Philadelphia, and was also treasurer of the Asylum for feeble minded children at Media, Pennsylvania. It was, however, as Manager of the House of Refuge for juvenile delinquents that he found the largest sphere for his public spirited labors. He was married in 1830. His wife, two sons and two daughters survived him. He died May 12, 1868. He was one of the original members of this College, and served as one of the trustees for a number of years."

Samuel F. Troth presented to the College a [record] book, kept by himself for a period of nearly forty years, containing valuable statistics regarding the College.

On motion of E. Parrish, a vote of thanks was unanimously tendered for the present, and Samuel F. Troth respectfully requested to fill up to the present time in his own hand the list of members and graduates.

The committee appointed to inquire concerning F. F. Muller, of San Antonio, Texas, proposed for membership at last meeting, having reported satisfactorily, a ballot was ordered, which resulted in his election to membership.

William Procter, Jr., presented, in the name of Daniel Hanbury, of London, honorary member of the College, a large engraving of the late Jacob Bell, founder of the Pharmaceutical Society, also a photograph of the old Plough Court Laboratory, which were accepted, and the thanks of the College returned to Mr. Hanbury.

A remarkably fine specimen of *Polygala senega*, the entire plant dried so as to retain the color of the flowers and leaves, was presented by the same in the name of Edward S. Wayne, of Cincinnati.

Also, several fine specimens of refined sugar from Daniel McKean & Co., successors to Jos. S. Lovering & Co., for both of which the thanks of the College were voted, and the specimens put in the museum of the College.

The annual election of eight trustees being ordered, the following were elected:

W. H. Pile, M.D.,
H. N. Rittenhouse,
W. J. Jenks,
E. Parrish,

A. B. Taylor,
W. C. Bakes,
Evan T. Ellis,
Charles Shivers,

W. Procter, Jr., as Editor of the American Journal of Pharmacy, made a statement regarding the present business management of the Journal, and suggested the appointment of a committee of business men to confer with the Publishing Committee.

After some discussion, the following resolution was adopted:

Resolved, That a committee of three members be appointed to confer with the Committee of Publication regarding the business transactions

of the Journal in all its bearings, and report to the next meeting of the College.

The Chair appointed James T. Shinn, Robert Shoemaker, and Charles Bullock as the committee.

Prof. Maisch made an appeal for the Pharmaceutical meetings, commencing the third Tuesday in October, at eight o'clock, P. M.; and Dr. Pile, the Registrar, was requested to send notices of the meeting to the members generally.

The committee on deceased members was re-elected for the ensuing year.

On motion of Robert England, the plan of having printed voting slips be adopted at the semi-annual as at the annual meeting.

On motion, then adjourned.

CHARLES BULLOCK, *Secretary*.

Editorial Department.

MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION AT BALTIMORE.—The minutes of this body will be found in the beginning of this number, and will convey to the reader a better idea of the meeting than any notice we can give here. On the whole, it was a pleasant, quiet gathering, adding to our numbers largely, and extending fraternal feeling among the members.

EXHIBITION OF CHEMICALS AND DRUGS.—The large room over that in which the Association met was devoted to the exhibition of drugs, chemicals and apparatus. So much time has elapsed since the meeting that interest in this department has greatly abated, yet, as promised in our news sheet for October, the following abstract is put on record, mainly taken from the Baltimore Gazette, as we have been unable to avail ourselves of the official report.

SPECIMENS OF CHEMICAL PRODUCTS, PHARMACEUTICAL PREPARATIONS, &c.—Messrs. Powers & Weightman, of Philadelphia, exhibited the largest and most complete assortment of specimens to be found within the hall. Among their collection of chemical products were noticed several large and beautiful specimens of crystalized alum and sulphate of copper, and specimens of nitrate of silver of unusually large size and purity. Two glass cases containing sulphate of morphia and sulphate of quinine, weighing about sixty ounces each, attracted special attention. Other specimens were displayed in great variety.

Messrs. Rosengarten & Sons, of Philadelphia, exhibited a handsome collection of chemicals, prominent among which were beautiful specimens of piperin, permanganate of potassium, crystalized strychnia, ammonio-citrate of bismuth, chromic acid and sulphate of cinchonia.

Messrs. Charles T. White & Co., of New York, deposited interesting specimens of iodide of potassium, bromide of potassium, pyrophosphate

of iron, valerianic acid, chemically pure mineral acids and pure acetic acid.

Mr. E. Schering, of Berlin, Prussia, through his agents in New York, exhibited specimens of hydrate of chloral and per chloride of iron, beautifully crystallized.

Messrs. Thomsen & Block, of Baltimore, had on deposit a fine display of pure Epsom salts and other drugs and chemicals.

Mr. Wm. Davidson, of the Baltimore Chemical Works, exhibited fine specimens of acetate of lead and acetic acid, manufactured at the Harford Furnace Chemical Works, Harford county, Md., also, Merck's phosphoric acid in sticks, and specimen crystals of iodide of potassium and bromide of potassium, and various other rare chemicals.

The Baltimore Chrome Works had on exhibition large specimens of crystallized bichromate of potassium, orange red color, together with chrome ore from which the salt is prepared.

Messrs. Adams & Drexel, Baltimore, had a fine display of druggists' glass labels and sundries.

Messrs. McKesson & Robbins, of New York, had an extensive display of pure drugs of all kinds, including gelatin-coated pills.

Messrs. Hance Bros. & White, of Philadelphia, exhibited extracts of all kinds, both fluid and solid, and various kinds of healing plasters.

Mr. S. Mason McCollin displayed a collection of pharmaceutical preparations and flavoring extracts.

The Phoenix Glass Works of Baltimore had a magnificent assortment of druggists' glass ware in white, blue and green colors.

Messrs. Mellor & Rittenhouse, of Philadelphia, presented an assortment of fluid extracts, essences and essential oils.

Messrs. Bullock & Crenshaw, of Philadelphia, exhibited a magnificent display of sugar-coated pills and granules.

Mr. Jeremiah Quinlan, of New York, displayed elegant and chaste glass labels and druggists' sundries.

Mr. Wm. C. Bakes, of Philadelphia, had an extensive assortment of pharmaceutical preparations and improved pestle and mortar worked by hand power.

Mr. John Matthews, of New York, exhibited a superb soda fountain of mottled marble and silver mountings, constructed in the Gothic style of architecture, valued at \$1,200.

Messrs. Wm. R. Warner & Co., of Philadelphia, displayed beautiful specimens of sugar-coated pills.

Messrs. Hartman, Laist & Co., of Cincinnati, Ohio, had on deposit fine specimens of glycerin and Epsom salts.

Messrs. Samuel Campbell & Co., of Philadelphia, exhibited a complete assortment of superior perfumes and pharmaceutical specialties.

Mr. Edward Parrish, of Philadelphia, a similar collection.

Mr. Robert Shoemaker, of Philadelphia, displayed a large assortment of pulverized drugs.

Messrs. Sharp & Dohme, of Baltimore, exhibited fluid extracts, pharmaceutical preparations and specialties.

Messrs. N. Hynson Jennings & Co., had on deposit an extensive assortment of pharmaceutical specialties, sherry kino and a beautiful collection of pure perfumes.

Messrs. Andrews & Thompson, of Baltimore, displayed among other articles, specimens of pyro-phosphate of iron, chloride of potassium, citrate of iron and hypophosphate of manganese.

Messrs. Burrough Bros., Baltimore, exhibited the most complete assortment of fluid extracts in the hall.

Dr. Wilson H. Pile, of Philadelphia, deposited thermometers, hydrometers, &c., and Mr. H. Troemner, of the same city, an improved drug mill.

The collection throughout was pronounced to be one of the most complete that has ever been presented at a meeting of the Association.

Besides these specimens were many not enumerated and various objects of interest which our space will not permit us to dwell upon. The collection of McKesson & Robbins was particularly interesting. Among the novelties not heretofore exhibited was a collection illustrative of how the microscope can be useful to the pharmacist.

Dr. Frederick Hoffman, of New York, exhibited a choice selection of microscopic objects of medicinal drugs and articles of food. The microscope is now deemed indispensable to the educated pharmacist; its application to the examination of drugs, of pharmaceutical preparations as well as of articles of commerce and of domestic use, has become general. A collection of reliable specimens of microscopical preparations of medicinal drugs, of their adulterations or accidental or fraudulent admixture, is of great service to the pharmacist for comparative examination, as well as for the instruction of apprentices and clerks.

Such preparations require not only much time and leisure, but also a degree of manipulative skill and practice not easily attained; therefore the preparation and sale of microscopical objects of drugs by some practiced pharmaceutical preparers has met with due approval.

The objects exhibited were mostly prepared by Mr. C. Rodig, in Hamburg, Germany, and were of great excellence. They were mounted either in Canada balsam or in glycerin, or glycerin with additions of alcohol, phenol, chlorides, &c., according to the nature of the object. Specimens of barks, wood and roots were in many cases represented in vertical, in radial and transverse sections.

THE EXCURSION ON FRIDAY AFTERNOON AND EVENING was a perfect success. Notwithstanding the expressed wish of the meeting at Chicago, the Pharmacists of Baltimore determined to extend their usual liberal hospitality to the visiting members by an excursion down the bay to Annapolis, in the steamer *Champion*, and a supper at Holly Grove, near North Point. Between three and four hundred members and their friends were on the boat, which was not crowded, and was admirably fitted for the purpose. An excellent band of musicians added to the entertainment, and throughout nothing occurred to mar the most perfect comfort and enjoyment of the excursion. At Annapolis permission was obtained to stop at the Government wharf and visit the museum buildings and grounds of the United States Naval Academy, and at Holly Grove, after partaking of a sumptuous supper, rendered comfortable by ample accommodations, some of the ladies of the company and their friends enjoyed themselves in those light fantastic movements in which they delight to partake. At 9 o'clock, P. M., the steamer's whistle called all aboard, and an hour afterwards, during which various speeches and resolutions were passed, and much hilarity exhibited, the company left the vessel deeply impressed with the complete and perfect manner in which their Baltimore friends had extended their hospitality.

THE BRITISH PHARMACEUTICAL CONFERENCE MEETING.—This body met in the Royal Institution building, Colquitt street, Liverpool, at 10 o'clock, A. M., on Tuesday, the 13th of September, Mr. W. W. Stoddart, President. As a preliminary step, 920 candidates for membership were duly elected by ballot, making the members of the Conference number about 1,500. The report of the executive committee exhibits the fact that an active canvass for members throughout the country had produced the large additional membership. The report announces that the year book, under the editorship of Mr. Brough, may be expected about December 1st. It also informs of the liberal donation of Thomas Hyde Hills, of a check for fifty guineas, to promote the objects of the Association. Delegates were in attendance from the local associations at Bristol, Nottingham, Edinburgh, Manchester, London, Ashton and Dunkinfield, Scarborough, Leeds, Bradford, Sunderland, Bath, Brighton, and Newcastle-on-Tyne. Prof. Carlos Murray, of Buenos Ayres; Prof. Soubeiran, of Paris, and Senor Joachim Correo de Mello, of Brazil, were elected foreign members. The President delivered a long and interesting address, full of scientific facts, and concluding with a well merited eulogium on the Secretaries and Treasurer, Messrs. Attfield, Reynolds and Brady.

In the evening, after this session, the President and officers were entertained by the local committee by a dinner at the Adelphi Hotel, the party numbering more than one hundred, which was conducted in true English style, with toasts and repartee. It was from this social meeting of the officers that the telegram received by the Baltimore meeting emanated.

The Treasurer's report was read, and a committee appointed on the Exhibition, when the following papers were read, viz.: On the Purity of Yellow Bees Wax of Pharmacy, by Edward Davies; on Saccharo-Chiretin, by D. S. Kemp, of Bombay; on the Strength of 24 Specimens of Saccharated Carbonate of Iron; on an Apparatus for Regulating Heat, and on the Apprenticeship and Early Training of Pharmacists, by F. Baden Bengel; Notes on the Cultivation of the Opium Poppy in Australia, by John W. Wood; Analysis of Bitter Cassava Juice, by Professor Attfield; on the so-called Citrate of Magnesia, of Pharmacy, by F. M. Rimmington, on the Specific Gravity and Actual Weight of Certain Volume Measures of Various Liquids, by the same, and on Decoction of Sarsaparilla, by the same.

When the Conference re-assembled at 10 o'clock, on Wednesday morning, September 14th, Prof. Attfield stated that an answer had been received from the American Pharmaceutical Association, in conference at Baltimore. After some usual business, the reading of papers was resumed in taking up a long essay by Mr. Joseph Ince, on "A Century of Old Books Relating to Pharmacy." This is the extent of the proceedings received through the Pharmaceutical journals, which print the proceedings by short instalments.

OUR JOURNAL.—With this number ends the forty-second volume of the American Journal of Pharmacy; and it may be well to say a few words in regard to the future. For some time past the plan of making the Journal a *Monthly* has been entertained, a change proposed in harmony with the prevailing idea of frequent issues in scientific serials. If this is carried out, it is the intention of the Publishing Committee to make a complete change in the organization of the business department of the Journal, and especially in reference to its facilities and value as an advertising medium, to accomplish which it is proposed to have a *Business Editor*, who shall have charge of the entire business of the Journal, advertising sheet, accounts, finances, distribution and custody of the stock; and who shall have his office at the College Hall, where all business in relation to the Journal will be transacted. Although this arrangement has the entire approval of the present Editor, in view of the best interests of the Journal and the College, and, in fact, was suggested by him, yet he believes the time is drawing near when it will be right for him to retire from the helm which he has so long guided in the varying sunshine and gloom of its career, and let some younger and more efficient worker take his place. It is more than one-third of a century since his connection with its pages, as a contributor, commenced, during twenty-five years of which his services as Editor have been continuous; and, though much of this time it has been a labor of love, he believes that now he is entitled to a season of rest from the pressure of responsibility which ever attends faithful editorial service.

NEW CHAPTER IN THE HISTORY OF CHLOROFORM.—We learn from the Pharmaceutical Journal of Oct. 15th that Mr. George Waldie, a chemist and druggist of Linlithgow, Scotland, has published a pamphlet entitled, "the true story of the introduction of chloroform into anæsthetics." In this pamphlet Mr. Waldie claims for his brother, David Waldie, now of Barnagore, Calcutta, much of the credit due for the discovery of the anæsthetic properties of chloroform. The account given by David Waldie, himself, of his share in the discovery is as follows:

"On the occasion of a visit to Dr. Simpson, when in Scotland, in 1847, he spoke to me of his trial of various vapors, in his endeavors to discover something else than ether, at that time employed to some extent for anæsthetic purposes, amongst others mentioning chloric ether, the chemical constitution of which he was evidently not aware of. This I explained to him, showing him that it was chiefly vapor of alcohol that would be inhaled, and advised him to try pure chloroform, which appeared to me likely to be suitable. I promised, also, to prepare some as soon as I could on my return to Liverpool and send it to him for trial."

On returning to Liverpool the destruction by fire of the Apothecaries Company's Laboratory, where Mr. Waldie was an operator, prevented him from giving attention to the matter, when sometime after he read the announcement that Dr. Simpson had discovered the anæsthetic properties of chloroform, he having obtained it through Duncan & Flockhart,

chemists, of Edinburgh. The only acknowledgement ever given by Dr. Simpson for the essential information given by Waldie, was in these words, in a foot note in his original pamphlet: "Mr. Waldie first named to me the perchloride of formyle, as worthy, among others, of a trial." Mr. Waldie, feeling disappointed that Dr. Simpson should say so little about his agency in the matter, wrote a paper entitled, "Chloroform, the new agent for producing insensibility to pain by inhalation," which he read before the Liverpool Library and Philosophical Society, in which he gives a full account of the transaction, preceded by a history of chloric ether and chloroform. Mr. Abraham, of Liverpool, gives great weight to the claims of Mr. Waldie, who introduced the custom of making chloric ether from pure chloroform, instead of the direct method of Guthrie, and thinks that but for his suggestion some other person might have made the discovery, if, indeed, it would have been made at all.

RESIGNATION OF A FAITHFUL OFFICER.—But few who have had to do with the Pennsylvania Hospital during the past forty years will fail to remember with satisfaction their intercourse with the gentleman who, during that long period, has held the position of Apothecary in the Institution. The pharmacy of that hospital is conducted in a well-appointed shop, which, during the incumbency of Dr. Conrad, has been refitted with many improvements for dispensing. The corps of physicians who give their services to the hospital have always been among the first men of the medical profession in Philadelphia, whose prescriptions involve a great variety of dispensing, and especially include the newer remedies. Hence, it has often happened that the experience of Dr. Conrad has been useful to others beyond the Institution, and has been freely accorded. The corps of resident physicians, changing as it does annually or biennially, has brought Dr. Conrad into intimate intercourse with many members of the medical profession, and with numerous medical visitors to library and wards, and it is with much pleasure we record a recent action of those of his medical friends who, in one way or another have been associated with him during his long career. Knowing his intention to resign, these gentlemen quietly, without going beyond their own number, made up a purse of seventeen hundred dollars, and handed it to Dr. Conrad, with the assurance that it was his without any conditions. The sum itself is a handsome testimonial, but the presentation with it of a beautifully engrossed tribute of friendship, signed by the numerous friends who originated it, was as truly grateful to the recipient as it was highly honorable to the hearts and the liberality of the donors. After so long and meritorious a service we trust Dr. Conrad will live many years to enjoy the retirement which he has sought.

The Medical Times, a semi-monthly Journal of Medical and Surgical Science. Published on the 1st and 15th of each month, by J. B. Lippincott & Co., 715 Market street, Philadelphia. Saturday, Oct. 1, 1870. Vol. 1, No. 1.

This new medical journal enters the field with a fair promise of success, being supported by a long array of proposed contributors and an enterprising publisher. Its origination appears to have been the result of the deliberate consideration and approval of more than one hundred physicians, gathered in a meeting. "The Medical Times, therefore, appears as the result of no mere private enterprise, nor as the organ of any school or party, but as a journal which may fairly claim to represent the medical profession and medical interests of Philadelphia." "The position to which it aspires is one free alike from pure local interests and from partizan spirit. The only aims which shall be recognized in its management are the advancement of medical and surgical science, the detection and reform of abuses and the promotion of the interests of the profession at large." With these aims the Editor asks for it a welcome from the entire medical profession of the country.

A Cyclopædia of Quantitative Chemical Analysis. By Frank H. Storer, A.M., Prof. of General and Analytical Chemistry in the Massachusetts Institute of Technology. Part I. Sever, Francis & Co., Boston and Cambridge, 1870.

It is something new to present the details of quantitative analysis in the form of a dictionary. Prof. Storer has conceived the idea that the processes of analysis may be so arranged that the views of the best observers on each subject may be brought together when their importance justifies the space required, and where the several methods that have been suggested may be placed side by side. The author says he has drawn freely from the best works on analysis, and from other works when necessary, and further says, "It is noteworthy that the tendency of all the works recently published on quantitative analysis is towards condensation and abbreviation, while the aim of the present book is to show that perspicuity can be best gained by amplification if need be and *methodical arrangement*. The author believes that the interests of chemists and chemical students alike demand two kinds of books upon quantitative analysis. The one kind looking to completeness in all directions, while the other is given over either to special instruction or to the discussion of special applications of analysis in some one of the various departments of chemistry." The present part contains articles on acidimetry, alcoholometry, alkalimetry, but is chiefly occupied with carbon and carbonic acid, ending with carbonate of silver.

Temperatures are given by centigrade. To avoid increasing the volume wood-cuts are omitted. This is certainly a mistake, as, besides increasing the clearness of descriptions of processes, outline figures, showing the relation of parts and their shape in apparatus, give ideas more correctly than simple descriptions, and render these much briefer. Judging the coming volume by this first part, it will prove very useful to the chemist as well as to the student; to the former, by grouping processes of which he needs a reminder; to the latter, as affording advice and assistance in every variety of analysis, and in a form easily reached.

The People's Literary Companion, E. C. Allen & Co., Augusta, Maine, published monthly. 16 pp. folio. With an engraving called "From Shore to Shore," accompanying—by post—from the publishers; price 75 cents per year. We cannot do more than acknowledge the receipt of this package, and return thanks for the courtesy; we have neither time nor space to notice the paper as a literary production, it being entirely outside of our province.

Archives of Science and Transactions of the Orleans County Society of Natural Sciences, Oct. 1870, vol. 1, No. 1. J. M. Currier, M.D., of Newport, Vermont, and Geo. A. Hinman, M.D., West Charleston, Vt., p. 64, octavo.

This new advocate of science contains papers on the character and customs of the Pawnee Indians; a qualitative analysis of mineral springs in Essex county, Vermont; the Indian history of northern Vermont; a meteorological register, and other papers of interest. It is published quarterly at \$2.50 per annum.

Handbook of Medical Microscopy. By Joseph G. Richardson, M.D., microscopist to the Pennsylvania Hospital, etc., etc. Philadelphia, J. B. Lippincott & Co., 1871, pp. 333, 12mo.

The author of this volume has distinguished himself on several occasions by microscopical investigations, and has exhibited an amount of energy and perseverance that entitles his labors to respectful consideration. "The book owes its origin to a belief entertained by the author that there exists in the profession an increasing sense of the importance of microscopic research, and a growing desire to render its advantages available in the routine of daily practice." To meet this desire the book first describes the microscope and microscopic manipulation, and then enters on the microscopic examination of urine, healthy and morbid, pus, mucus, saliva, milk, blood, sputum in phthisis, vomited matters, anal, vaginal and uterine discharges, animal and vegetable parasites, blood stains and spermatic fluid in medico-legal cases, and finally hints on the examination of morbid growths. It is evident that the book addresses itself mainly to the physician in practice. The subjects are handled in a way that convinces the reader that the author is practically familiar with them. Wood cut illustrations are employed, and the work as a whole will be a valuable addition to the library of every earnest practitioner not already an expert.

The Medical Herbarium. A collection of dried samples of medicinal plants. By T. F. Allea, M.D., New York; part first.

Each part contains ten specimens of dried plants carefully mounted on thick white paper $11\frac{1}{2} \times 16\frac{1}{2}$ inches, with a fly leaf. The plants are poisoned with corrosive sublimate. "The Medical Herbarium" is intended for physicians and pharmacutists, and especially for lecturers. Price two dollars for each number. The idea is a good one. Each specimen has a printed slip giving the scientific and common name and

time of flowering, part used, etc. Henry M. Smith & Co., 107 Fourth avenue, New York, is the publisher, to whom orders should be sent.

The Physicians visiting list for 1871, twentieth year of its publication. Philadelphia. Lindsay & Blakiston.

One of the very first of its kind. This little annual helper to the physician again presents itself for notice, and deserves the large patronage it receives. It is well bound, in pocket-book form and contains a good pencil.

OBITUARY.

BENJAMIN BROGDEN ORRIDGE, one of the founders of the Pharmaceutical Society of Great Britain, died at London, on the 17th of July, 1870, aged 57 years. He was born at Malta, where his father held an official position, but returned to England during his minority. His efforts in the "Society" were varied, but chiefly directed to the library and the benevolent fund, the latter being his especial interest. Mr. Orridge's literary labors were chiefly of an archaeological character.

PROF. WILLIAM ALLEN MILLER, of King's College, London, died at Liverpool, of apoplexy, on the 30th of September, 1870, having left London on the 13th to attend the British Association, and taken ill *en route*. He was born Dec. 17th, 1817, at Ipswich, was two years at Friends' school at Ackworth, in Yorkshire, where he imbibed a taste for chemical pursuits. He afterwards studied medicine at King's College, studied chemistry in Liebig's laboratory, became the assistant of Prof. Daniell and afterwards his successor, as the chemical teacher in King's College, where, for twenty-five years, he taught with great success. As a man, Prof. Miller occupied a high standing. One who knew him says, "No man since Faraday will be so much regretted." "It was impossible to come into contact with him without feeling oneself in the presence of a man of pure nature, of spotless integrity, of sound and sagacious judgment and of true gentlemanly feeling." Prof. Miller is chiefly known by his treatise on chemistry, published in 1855. His writings on various subjects are in the Journals. He was a member of the Royal Society and of many others, and was an honorary member of the Pharmaceutical Society, in which he took an interest.

AUGUSTUS MATTHIESSEN, F.R.S., Prof. of Chemistry at St. Bartholomew's Hospital, died on the 6th of October, from the effects of prussic acid, taken during temporary mental depression. He was born in London, Jan. 2d, 1831, and was one of the most promising of the younger chemists of England. He was a pupil of Bunsen, and whilst in his laboratory wrote his essay "on the preparation of the metals of the alkalies and alkaline earths by electrolysis." He also investigated the conductivity of metals, the constitution of narcotina, and, more recently, in conjunction with Mr. Wright, discovered apomorphia. He was a fellow of the Royal Society, and one of the Editors of the *Philosophical Magazine*.

WILLIAM MCCONNELL, a prominent member of the Canadian Pharmaceutical Society, died on the 28th of September, from the effects of a railroad accident. He lingered for ten hours, and died, having retained his faculties until death. He resided at Coburg, and leaves a widow and four children.—*Canad. Pharm. Journ.*

DR. BOLLEY, of Zurich, Switzerland, and Professor of Chemistry at the celebrated Polytechnic Institution in that city, died suddenly on the 3d of August last, in his 58th year. He was a native of Heidelberg.

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OF THE

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Of the City of New York.

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FORTY-FIRST SESSION,

OCTOBER, 1870, TO MARCH, 1871.

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COLLEGE OF PHARMACY

OF THE CITY OF NEW YORK

EXHIBITION

OF THE CITY OF NEW YORK

1876

AND

1877

College of Pharmacy of the City of New York

WILLIAM HEGEMAN

THEOBALD TROTH

WILLIAM WRIGHT

COLLEGE OF PHARMACY

OF THE CITY OF NEW YORK.

SESSION OF 1870-'71.

EDUCATION

EDWARD R. SQUIRE
WALTER BEE DAY
CHARLES R. CHANDLER

College of Pharmacy, of the City of New York.

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FACULTY.

CHARLES F. CHANDLER, PH. D., . . . *Professor of Chemistry.*
WALTER DE F. DAY, M. D., . . . *Professor of Materia Medica and Botany.*
EDWARD R. SQUIBB, M. D., . . . *Professor of Pharmacy.*

PROSPECTUS.

THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK, (organized in 1829, chartered in 1831, and permanently extended in 1856,) enters with the coming session, upon the 41st year of its existence and labors.

The scheme of instruction in this College for the Session of 1870-71, will, as usual, embrace the branches of Chemistry, Materia Medica, and Pharmacy, and the instructors have been sought for with great care and attention. In any full course of instruction, the different branches which conventional custom has separated under these three heads, cannot well be disturbed.

Chemistry must pervade and dominate over the whole field, and an important part of the success of the other branches must depend upon a knowledge of the special reactions and results of Chemistry.

Materia Medica must invade the field of Chemistry for all its chemical substances and their relations, and must embrace within its field and scope not only Chemistry, but other natural sciences, and, in short, all that knowledge and research have applied to therapeutics.

Pharmacy in its general sense, is little else than Mechanical Chemistry specially applied and dextrously used; or, the general principles of Natural Philosophy, Chemistry and Natural History applied to one of the special necessities of mankind; and it cannot move without invading the premises both of Chemistry and Materia Medica. It is, therefore, an adjunct to these branches, whereby their more abstruse and mere scientific knowledge and research are brought into the necessary relations for daily practice. Fortunately, where the three branches come together, it is not an interference or collision, but a blending, whereby the principles and facts common to each or all are taught by each in repetition, and therefore, the better enforced.

The Trustees of the College aware of their responsibility to afford

proper means for Pharmaceutical education in this city, last year spared no expense that appeared warrantable, and the result fully justified their efforts. This year, therefore, they present a still more extended course of instruction by the same teachers; and in the hope of making it more complete and more successful each year, they again appeal to the Medical Profession, and to Pharmacists and Druggists generally, to support them in maintaining a School of Pharmacy commensurate with the important interests involved. It will be generally acknowledged, that in this country Schools of Pharmacy are not sufficiently numerous; and that deficiency in Pharmaceutical knowledge results in giving a low moral tone to Pharmaceutical skill and practice. An effective course of six lectures a week, extending over five months of the year, is now offered as a substantial improvement upon any previous scheme of instruction, and if any fair proportion of Pharmacists and Druggists send their young men to attend it, they will not only get the advantages which knowledge always brings, but will so stimulate and encourage the Instructors, and so gratify and repay the Trustees, as to secure an important advancement in the interests of the College.

CHEMISTRY.

Professor CHARLES F. CHANDLER, Ph. D., of the School of Mines, Columbia College, continues to occupy the chair of Chemistry.

The Chemical Lectures, owing to the extent of the scientific field which they are to include, occupy a prominent part in the course of instruction, and the subjects in coming under this consideration are so arranged as to secure to the student a satisfactory acquaintance with this science when he has attained the two successive courses which are required of him, previous to examination. The general object, however, held in view, being to render instruction as practically useful as possible, the several parts of the subject will be treated more or less in detail, according to the degree of importance they possess to the Pharmacist; but all of them with such amplitude as is compatible with the prescribed limits.

The course will extend over the whole field of inorganic and organic Chemistry. Every important element or compound will be discussed—its mode of occurrence in nature, its preparation, properties, the tests of its purity being given, and its more striking properties illustrated by specimens and experiments.

The Lectures will include the Pharmaceutical treatment of medicin-

al substances in the manufactures and laboratory, and their examination by practical analysis, illustrated by a series of instructive experiments. Since *Materia Medica* rests its future utility, to a very great extent, upon a more thorough chemical history of drugs, and as the task of making this branch of medicine a philosophical science, if not properly, yet effectually falls to the share of the Pharmaceutical Chemist, it may be expected that particular attention is paid to analysis, both in organic and proximate analysis of organized material. The latter also includes toxicology, with the practical manipulations in the research of poisons. The Lectures on Chemistry will occupy three hours each week.

LABORATORY PRACTICE.

Arrangements have been made through the agency of the Professor of Chemistry, who is also in charge of the Laboratory of the School of Mines of Columbia College, by which students of the College of Pharmacy will be enabled to attend the Lectures, and avail themselves of practical laboratory instruction at the laboratory named, under the same conditions and mode of tuition as at the laboratories of European Universities.

MATERIA MEDICA AND BOTANY.

Dr. WALTER DEF. DAY occupies this chair, and will devote to it one hour on each of two of the lecture evenings. The general principles of the classification of plants into their natural orders and genera will be explained, and while too much detail will be avoided, it is hoped that a valuable medical herbarium will enable the student to grasp without difficulty the more important facts of Medical Botany.

Pharmacognosy will be illustrated by systematic instructions in the natural and commercial history, preparation, physical and chemical properties and doses of the various officinal agents; special attention being paid to the tests for ascertaining the purity of those articles most subject to adulteration. For this purpose a carefully selected and extensive cabinet offers unusual facilities.

PHARMACY.

Dr. EDWARD R. SQUIBB, of Brooklyn, is engaged to deliver the course of instruction in Practical Pharmacy.

The course of lectures will consist mainly of a review in detail of

the United States Pharmacopœia in regard to the selection, preservation, preparation and combination of medicinal substances.

The prevention and cure of disease, and the alleviation of suffering are the functions of the Physician. To supply him with an important means of performing his office is the function of the Pharmacist; and the source of supply for such means is the Druggist and the common drug market. Hence a primary object of instruction and study must be the drug market for quality of material, since without critical discrimination there, no art or skill can be available—time and labor will be wasted—the Physician's knowledge will be useless—and human health and life will be endangered.

Many important drugs and preparations will be shown in their prominent market grades or varieties, and an earnest effort will be made to present them in a clear light as regards quality and condition, so that the instruction may be directed toward Druggists in connection with the wholesale market, as well as toward Pharmacists for the benefit of the Physician and the patient.

Next in importance, is instruction in the preservation and management of materials; since however well selected, want of knowledge here may derange or defeat the best directed efforts.

Finally, the preparation and combination of materials with accurately applied knowledge and skill, will complete the design in this branch of instruction. As far as may be easily practicable, this department of Pharmacy will be illustrated by actual practice, upon the scale of the Pharmacopœia.

The important duties of reading and dispensing prescriptions will receive all the attention that it is possible for the instructor to give to them, and he hopes to impress upon all, the very grave responsibilities which are inseparable from this as an ultimate object of all the teaching.

The Lectures on Pharmacy will commence on Monday evening, October 3d, 1870, at eight o'clock, and will be given on every succeeding Monday evening at the same hour, and on every Wednesday evening, at half-past eight o'clock, throughout the session.

The Library contains a large collection of standard works on all the branches of the profession, and it is contemplated to add many of the more recent works during the coming session. Students can have access to its volumes without charge.

THE LECTURE TERM.

The Forty-first annual course of Lectures of this College will commence October 3d, 1870, and be continued until the middle of March, 1871, at the Lecture Room of the College of Pharmacy, in the University Building, corner of Waverly Place and University Place. The room is spacious, and well adapted for the purpose, besides being, on account of its central position, accessible to all the various lines of cars and stages.

The Lectures on Chemistry, by Professor C. F. CHANDLER, will be given on Wednesday evenings, at 7 o'clock, and Friday evenings, at 8 o'clock.

The Lectures on Materia Medica and Botany, by Professor W. D. DAY, M. D., will be given on Monday and Friday evenings, at 7 o'clock.

The Lectures on Pharmacy, by Dr. EDWARD R. SQUIBB, on Monday evenings, at 8 o'clock, and on Wednesday evenings, at half-past 8.

During the Lecture term, the Professors will accompany the second year students to various manufacturing establishments, where they will be enabled to see many of the operations alluded to in the Lectures, conducted on the large scale.

• **Qualification for Graduation required of all presenting themselves for Examination.**

Every person upon whom a diploma of this College shall be conferred, must be of good moral character, must have arrived at the age of twenty-one years, have attended two courses of each of the lectures delivered in the College, or one course in this College, and one course in some other College of Pharmacy; or when there is no such College organized in his locality, in some other regular (medical) institution in which the same branches are taught; and have served at least four years with a person or persons qualified to conduct the Drug or the Apothecary business—of which circumstance he must produce sufficient evidence to the Board of Trustees.

He shall also be required to produce an original dissertation, or thesis, upon some subject of the materia medica, pharmacy, chemistry, or one of the branches of science immediately connected therewith. The thesis shall be deposited with the Secretary of the College on or before the twentieth of February. Unsuccessful candidates shall have their papers returned to them, and shall be entitled to a future examination without additional expense.

Students who have attended two full courses of Lectures in the College, shall be entitled to attend future Lectures without charge; the tickets for that purpose shall be endorsed accordingly, and shall not be transferable.

The examination of candidates for the Diploma will be held the first week in March, and the commencement exercises on the third Thursday of the same month.

PRIZES.

The student who shall pass the most satisfactory general examination, will receive the PRIZE OF FIFTY DOLLARS offered by the College.

ANOTHER PRIZE OF FIFTY DOLLARS is offered by Dr. W. DE F. DAY, to the one passing the highest in Materia Medica and Botany.

FEES.

Lecture Tickets for the Session,	\$30 00
Matriculation Ticket (paid but once),	2 00
Graduation or Diploma Fee,	5 00

The matriculation fee is payable to E. L. MILHAU, Secretary of the College. This ticket should be purchased previous to purchase of lecture tickets, which can be purchased either of WM. WRIGHT, JR., Treasurer, 29 Liberty Street, or through the Secretary. Members and graduates of the College are admitted gratuitously.

Students are requested to be in attendance at the commencement of the course, in order to obtain the fullest benefit from the lectures.

Tickets for persons wishing to attend the Lectures of one Professor alone, will be Fifteen Dollars. As an inducement to pharmaceutical students to devote whatever time they possibly can to professional improvement, the College will accept such attendance at Lectures, and credit such payment as so much toward a complete course.

For further information, address EDWARD L. MILHAU, 183 Broadway, New York.

TEXT BOOKS.

CHEMISTRY, Fowne's.

MATERIA MEDICA, Pereira's; Edited by H. C. Wood, M. D.

BOTANY, Gray's Lessons.

PHARMACY, U. S. Pharmacopœia and U. S. Dispensatory.

THE MEMBERS OF THE CLASS

At the last Session, were

Abernethy, Robert H.	with Dr. H. H. Abernethy, Jersey City, N. J.
Atwater, Otis E.	Brattleboro, Vt.
Ballard, John W.	Davenport, Iowa.
Beames, Jas. W.	with Wm. V. Crissey & Co., New York.
Brettman, Fred'k J.	with J. G. Beach, New York.
Bung, Theo. M.	with Heydenreich Bros., Brooklyn, N. Y.
Coddington, Isaac, Jr.	with J. & I. Coddington, New York.
Cohen, Louis S.	New York.
Cole, Frank O.	with E. S. Wells, Bergen, N. J.
Comstock, G. W. R.	with W. H. Schieffelin & Co., New York.
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Carey, Henry	with Wheeler, Patterson & Co., New York.
Costales, Jose de J. y G.	with E. G. Straus, New York.
Davis, Geo. R.	with Saml T. Davis, Boonton, N. J.
De Leon, Thos. D.	with Geo. E. Shiels, New York.
De Motte, Henry A.	Jersey City, N. J.
Dickie, Chas. H.	with R. W. Robinson & Son, New York.
Domas, John M.	with Dr. N. J. Hepburn, New York.
Fulton, John C. P.	with W. H. Schieffelin & Co., New York.
Gilmore, John W.	with V. W. Brinckerhoff, N. Y.
Greene, M. E., M. D.	New York.
Hamman, Valentine	New York.
Hasenohr, Henry	<i>Chemistry</i> with B. Davis, New York.
Hawkins, M. Smith	with McKesson & Robbins, New York.
Horton, Josephine	<i>Chemistry</i> Morrisania, New York.
Hutchinson, John	with H. H. Dickinson, Brooklyn, N. Y.
Kelsey, Henry	<i>Pharmacy</i> with G. C. Glose, Brooklyn, N. Y.
Kilgore, Chas.	with McKesson & Robbins, New York.
Main, Thos. F.	with Tarrant & Co., New York.
McIntyre, Byron F.	with Lazell, Marsh & Gardiner, New York.
Meyersburg, A. G.	with A. Davis, New York.
Morris, John F.	with H. H. Dickinson, Brooklyn, N. Y.
Muir, Wm.	with D. G. Farwell, Brooklyn, N. Y.
Newton, John	with Dr. L. V. Newton, New York.
Plumb, Chas. S.	with Law & Boyd, New York.
Rains, Thomas B.	Columbia, Tenn.
Reckless, Charles S.	with W. H. Schieffelin & Co., New York.

Ribas, Sebastian.....	Barcelona, Spain.
Riegel, Louis.....	with Dr. Geo. Riegel, New York.
Riker Wm. H.....	with William B. Riker, New York.
Roths, Wm. G.....	with Dr. E. R. Squibb.
Satterlee, F. L., M. D.....	New York.
Schmidt, Frederic.....	Union Hill, N. J.
Schumacher, George.....	with A. F. Steele, New York.
Schwartzel, Joseph.....	with Jas. S. Aspinwall, New York.
Smith, Israel P.....	with C. W. Badger & Co., Newark, N. J.
Squibb, Edw. H.....	with Dr. E. R. Squibb.
Starr, Thomas.....	New York.
Stillman, John J.....	with C. W. Badger, Newark, N. J.
Stohlman, Wm. F.....	with G. A. Cassebeer, New York.
Terhune, N.....	with Dr. C. Van Riper, Passaic, N. J.
Underhill, John H.....	with W. H. Schieffelin & Co., New York.
Wells, Ephraim S.....	Bergen, N. J.
Wickham, Wm. H.....	with McKesson & Robbins, New York.
Wilson, Walter.....	with J. M. Button, New York.

THE GRADUATES IN PHARMACY

At the last Session, were

JOHN W. BALLARD,
FREDERICK J. BRETTMAN,
THOMAS D. DE LEON,
JOHN M. DOMAS,
WILLIAM MUIR,
CHARLES S. PLUMB,
ENRIQUE RAFAEL,
THOMAS B. RAINS,
SEBASTIAN RIBAS,
THOMAS STARR,
WILLIAM F. STOHLMAN,

The prize offered to the most proficient graduate, was awarded to,
JOHN W. BALLARD.

EDWARD L. MILHAU, Secretary,

183 Broadway, N. Y.

